

REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Complete document revision - also added device types 02, 03, 04, 05.	78-02-03	N A Hauck
B	Complete document revision: deleted type 02.	79-07-11	N A Hauck
C	Add condition C to burn-in. Format changes.	80-07-11	D Hill
D	Types 01, 03 and 04 INACTIVE for New Design. Use M38510/11501, 11502 and 11503, respectively, for case "X"; and M38510/11505, 11506 and 11507 respectively, for case "Y". Type 05 still active.	82-07-20	N A Hauck
E	Add case outlines H, P, and 2. Add vendor CAGE 01295 as a supplier for 01HX, 01PX, and 012X. Delete vendors CAGE numbers 07263 and 27014 from drawing. Engineering and editorial changes throughout.	93-05-04	M A Frye

CURRENT CAGE CODE 67268

REV																													
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REV	E	E	E	E	E	E	E	E	E																				
SHEET	15	16	17	18	19	20	21	22	23																				
REV STATUS OF SHEETS				REV			E	E	E	E	E	E	E	E	E	E	E	E	E	E									
				SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14									
PMIC N/A				PREPARED BY William E Shoup						DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444																			
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				APPROVED BY Nelson A Hauck																									
				DRAWING APPROVAL DATE 77-08-19																									
				REVISION LEVEL E																									
										SIZE A		CAGE CODE 14933		77040															
										SHEET 1 OF 23																			

1. SCOPE

1.1 Scope. This drawing describes device requirements for class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices".

1.2 Part or Identifying Number (PIN). The complete PIN shall be as shown in the following example:

77040	01	H	X
Drawing number	Device type (see 1.2.1)	Case outline (see 1.2.2)	Lead finish (see 1.2.3)

1.2.1 Device type(s). The device type(s) shall identify the circuit function as follows:

Device type	Generic number	Circuit function
01	7905/ LM120-5	Negative, voltage regulator, fixed -5 volts
03	7912/ LM120-12	Negative, voltage regulator, fixed -12 volts
04	7915/ LM120-15	Negative, voltage regulator, fixed -15 volts
05	7924/ LM120-24	Negative, voltage regulator, fixed -24 volts

1.2.2 Case outline(s). The case outline(s) shall be as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	Terminals	Package style
H	GDFP1-F10 or CDFP2-F10	10	flat package
P	GDIP1-T8 or CDIP2-T8	8	dual in-line package
X	MACY1-X3	3	T0-5 can
Y	MBFM1-P2	2	T0-3 power transistor case
2	CQCC1-N20	20	leadless chip carrier package

1.2.3 Lead finish. The lead finish shall be as specified in MIL-M-38510. Finish letter "X" shall not be marked on the microcircuit or its packaging. The "X" designation is for use in specifications when lead finishes A, B, and C are considered acceptable and interchangeable without preference.

1.3 Absolute maximum ratings.

Input voltage (V_{IN}):	
Device types 01, 03, 04	-35 V
Device type 05	-40 V
Storage temperature range	-65°C to +150°C
Lead temperature (soldering, 10 seconds)	300°C
Power dissipation (P_D): 1/, 2/	
Case outline H	0.675 W
Case outline P	1.050 W
Case outline X	2.0 W
Case outline Y	20.0 W
Case outline 2	1.375 W
Design output current (I_D):	
Case outlines H, P, X, and 2	0.5 A
Case outline Y	1.0 A
Thermal resistance, junction-to-case (θ_{JC}):	
Case outlines H, P, and 2	See MIL-STD-1835
Case outline X	15°C/W
Case outline Y	3°C/W

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1.3 Absolute maximum ratings - Continued.

Thermal resistance, junction-to-ambient (Θ_{JA}):

Case outline H	185°C/W
Case outline P	119°C/W
Case outline X	150°C/W
Case outline Y	35°C/W
Case outline 2	65°C/W

1.3 Recommended operating conditions.

Input voltage range (V_{IN}):

Device type 01	-7 V to -25 V
Device type 03	-15 V to -32 V
Device type 04	-18.5 V to -35 V
Device type 05	-28 V to -38 V
Ambient operating temperature range (T_A)	-55°C to +125°C

1/ Must withstand the added P_D due to short circuit test; e.g., I_{OS} .

2/ For temperatures above 25°C, derate at a factor of 5.4 mW/°C for case outline H, 8.4 mW/°C for case outline P, and 11 mW/°C for case outline 2.

2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and bulletin. Unless otherwise specified, the following specification, standards, and bulletin of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

SPECIFICATION

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

STANDARDS

MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.
MIL-STD-1835 - Microcircuit Case Outlines.

BULLETIN

MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

(Copies of the specification, standards, and bulletin required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

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3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.2 herein.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 1.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full ambient operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-STD-883 (see 3.1 herein). The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in MIL-BUL-103 (see 6.6 herein).

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.6 herein). The certificate of compliance submitted to DESC-EC prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-STD-883 (see 3.1 herein) shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change. Notification of change to DESC-EC shall be required in accordance with MIL-STD-883 (see 3.1 herein).

3.9 Verification and review. DESC, DESC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein).

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883.

(1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.

(2) $T_A = +125^\circ\text{C}$, minimum.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections. The following additional criteria shall apply.

4.3.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. Subgroups 7, 8, 9, 10, and 11 in table I, method 5005 of MIL-STD-883 shall be omitted.

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TABLE I. Electrical performance characteristics - Device type 01HX, 01PX, and 012X.

Test	Symbol	Conditions ^{1/} -55°C ≤ T _A ≤ +125°C unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V _{OUT}	V _{IN} = -7 V to -25 V, I _L = 5 mA to 350 mA	1, 2, 3	01HX, 01PX, 012X	-5.25	-4.75	V
Line regulation	V _{RLINE}	V _{IN} = -7 V to -25 V, I _L = 350 mA	1	01HX, 01PX, 012X	-50	+50	mV
		V _{IN} = -8 V to -18 V, I _L = 350 mA	2, 3	01HX, 01PX, 012X	-30	+30	mV
Load regulation	V _{RLOAD}	V _{IN} = -10 V, I _L = 5 mA to 500 mA	1, 2, 3	01HX, 01PX, 012X	-100	+100	mV
Standby current drain	I _{SCD}	V _{IN} = -10 V, I _L = 350 mA	1, 2, 3	01HX, 01PX, 012X		2	mA
Standby current drain change vs. line voltage	ΔI _{SCD} / (line)	V _{IN} = -8 V to -25 V, I _L = 350 mA	1, 2, 3	01HX, 01PX, 012X	-0.4	+0.4	mA
Standby current drain change vs. load current	ΔI _{SCD} / (load)	V _{IN} = -10 V, I _L = 5 mA to 350 mA	1, 2, 3	01HX, 01PX, 012X	-0.4	+0.4	mA
Output short circuit current	I _{OS}	V _{IN} = -30 V	1, 2, 3	01HX, 01PX, 012X		600	mA
Peak output current ^{2/}	I _{PK}	V _{IN} = -10 V, T _A = 25°C	1	01HX, 01PX, 012X	0.5	1.4	A
Ripple rejection ^{2/}	ΔV _{IN} / ΔV _{OUT}	V _{IN} = -8 V to -18 V, I _L = 100 mA, f = 120 Hz	4, 5, 6	01HX, 01PX, 012X	50		dB
		V _{IN} = -8 V to -18 V, T _A = 25°C, I _L = 300 mA, f = 120 Hz	4	01HX, 01PX, 012X	54		dB
Output noise voltage ^{2/}	V _{NO}	V _{IN} = -10 V, T _A = 25°C I _L = 350 mA, f = 10 Hz to 100 kHz	1	01HX, 01PX, 012X		400	μV
Temperature coefficient of output voltage ^{2/}	V _{RTH}	V _{IN} = -10 V, I _L = 5 mA	1, 2, 3	01HX, 01PX, 012X	-1.5	+1.5	mV/°C
Dropout voltage	V _{DROP}	V _{IN} = -10 V, I _L = 350 mA	1, 2, 3	01HX, 01PX, 012X		2.3	V

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Device type 01XX.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V_{OUT}	$V_{\text{IN}} = -8 \text{ V}, I_L = 5 \text{ mA}, 0.5 \text{ A}$	1, 2, 3	01XX	-5.25	-4.75	V
		$V_{\text{IN}} = -20 \text{ V}, I_L = 5 \text{ mA}, 0.5 \text{ A}$	1, 2, 3	01XX	-5.25	-4.75	V
		$V_{\text{IN}} = -30 \text{ V}, I_L = 5 \text{ mA}, 50 \text{ mA}$	1, 2, 3	01XX	-5.25	-4.75	V
		$V_{\text{IN}} = -10 \text{ V}, I_L = 5 \text{ mA},$ $T_A = 150^{\circ}\text{C}$	1, 2, 3	01XX	-5.30	-4.70	V
Line regulation	V_{RLINE}	$-30 \text{ V} \leq V_{\text{IN}} \leq -8 \text{ V},$ $I_L = 50 \text{ mA}$	1, 2, 3	01XX	-150	150	mV
		$-25 \text{ V} \leq V_{\text{IN}} \leq -8 \text{ V},$ $I_L = 350 \text{ mA}$	1, 2, 3	01XX	-50	50	mV
Load regulation	V_{RLOAD}	$V_{\text{IN}} = -10 \text{ V},$ $5 \text{ mA} \leq I_L \leq 500 \text{ mA}$	1, 2, 3	01XX	-100	100	mV
		$V_{\text{IN}} = -30 \text{ V},$ $5 \text{ mA} \leq I_L \leq 50 \text{ mA}$	1, 2, 3	01XX	-150	150	mV
Standby current drain	I_{SCD}	$V_{\text{IN}} = -10 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	01XX	0.5	3.0	mA
		$V_{\text{IN}} = -30 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	01XX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI_{SCD} (line)	$-30 \text{ V} \leq V_{\text{IN}} \leq -8 \text{ V},$ $I_L = 5 \text{ mA}$	1, 2, 3	01XX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI_{SCD} (load)	$5 \text{ mA} \leq I_L \leq 500 \text{ mA},$ $V_{\text{IN}} = -10 \text{ V}$	1, 2, 3	01XX	-0.5	0.5	mA

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Device type 01XX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -25\text{ V}$	1, 2, 3	01XX	0.00	1.50	A
		$V_{IN} = -30\text{ V}$	1, 2, 3	01XX	0.00	1.00	A
Peak output current	I_{PK}	$V_{IN} = -8\text{ V}$, forced $\Delta V_{OUT} = 0.48\text{ V}$	1, 2, 3	01XX	0.5	2.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -10\text{ V}$, $I_L = 125\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	01XX	45		dB
Output noise voltage	V_{NO}	$V_{IN} = -10\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 50\text{ mA}$	1	01XX		250	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -15\text{ V}$, $I_L = 500\text{ mA}$, $T_A = 25^{\circ}\text{C}$	1	01XX	-50	50	mV
Voltage start up	V_{START}	$V_{IN} = -20\text{ V}$, $R_L = 10\Omega$	1, 2, 3	01XX	-5.25	-4.75	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -10\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	01XX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -10\text{ V}$, $I_L = 50\text{ mA}$, $\Delta I_L = 200\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	01XX		2.5	mV/mA

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TABLE I. Electrical performance characteristics - Device type 01YX.

Test	Symbol	Conditions -55°C ≤ T _A ≤ +125°C unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V _{OUT}	V _{IN} = -8 V, I _L = 5 mA, 1.0 A	1, 2, 3	01YX	-5.25	-4.75	V
		V _{IN} = -20 V, I _L = 5 mA, 1.0 A	1, 2, 3	01YX	-5.25	-4.75	V
		V _{IN} = -30 V, I _L = 5 mA, 0.1 A	1, 2, 3	01YX	-5.25	-4.75	V
		V _{IN} = -10 V, I _L = 5 mA, T _A = 150°C	1, 2, 3	01YX	-5.30	-4.70	V
Line regulation	V _{RLINE}	-30 V ≤ V _{IN} ≤ -8 V, I _L = 0.1 A	1, 2, 3	01YX	-150	150	mV
		-25 V ≤ V _{IN} ≤ -8 V, I _L = 0.5 A	1, 2, 3	01YX	-75	75	mV
Load regulation	V _{RLOAD}	V _{IN} = -10 V, 5 mA ≤ I _L ≤ 1.0 A	1, 2, 3	01YX	-100	100	mV
		V _{IN} = -30 V, 5 mA ≤ I _L ≤ 0.1 A	1, 2, 3	01YX	-150	150	mV
Standby current drain	I _{SCD}	V _{IN} = -10 V, I _L = 5 mA	1, 2, 3	01YX	0.5	3.0	mA
		V _{IN} = -30 V, I _L = 5 mA	1, 2, 3	01YX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI _{SCD} (line)	-30 V ≤ V _{IN} ≤ -8 V, I _L = 5 mA	1, 2, 3	01YX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI _{SCD} (load)	5 mA ≤ I _L ≤ 1.0 A, V _{IN} = -10 V	1, 2, 3	01YX	-0.5	0.5	mA

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TABLE I. Electrical performance characteristics - Device type 01YX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -25\text{ V}$	1, 2, 3	01YX	0.00	3.50	A
		$V_{IN} = -30\text{ V}$	1, 2, 3	01YX	0.00	2.00	A
Peak output current	I_{PK}	$V_{IN} = -8\text{ V}$, forced $\Delta V_{OUT} = 0.48\text{ V}$	1, 2, 3	01YX	1.0	4.50	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -10\text{ V}$, $I_L = 350\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	01YX	45		dB
Output noise voltage	V_{NO}	$V_{IN} = -10\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 0.1\text{ A}$	1	01YX		250	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -15\text{ V}$, $I_L = 1.0\text{ A}$, $T_A = 25^{\circ}\text{C}$	1	01YX	-50	50	mV
Voltage start up	V_{START}	$V_{IN} = -20\text{ V}$, $R_L = 5\Omega$	1, 2, 3	01YX	-5.25	-4.75	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -10\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	01YX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -10\text{ V}$, $I_L = 100\text{ mA}$, $\Delta I_L = 400\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	01YX		2.5	mV/mA

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TABLE I. Electrical performance characteristics - Device type 03XX.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V_{OUT}	$V_{\text{IN}} = -15 \text{ V}, I_L = 5 \text{ mA}, 0.5 \text{ A}$	1, 2, 3	03XX	-12.60	-11.40	V
		$V_{\text{IN}} = -27 \text{ V}, I_L = 5 \text{ mA}, 0.5 \text{ A}$	1, 2, 3	03XX	-12.60	-11.40	V
		$V_{\text{IN}} = -35 \text{ V}, I_L = 5 \text{ mA}, 50 \text{ mA}$	1, 2, 3	03XX	-12.60	-11.40	V
		$V_{\text{IN}} = -17 \text{ V}, I_L = 5 \text{ mA},$ $T_A = 150^{\circ}\text{C}$	1, 2, 3	03XX	-12.72	-11.28	V
Line regulation	V_{RLINE}	$-35 \text{ V} \leq V_{\text{IN}} \leq -15 \text{ V},$ $I_L = 50 \text{ mA}$	1, 2, 3	03XX	-360	360	mV
		$-32 \text{ V} \leq V_{\text{IN}} \leq -15 \text{ V},$ $I_L = 350 \text{ mA}$	1, 2, 3	03XX	-120	120	mV
Load regulation	V_{RLOAD}	$V_{\text{IN}} = -17 \text{ V},$ $5 \text{ mA} \leq I_L \leq 500 \text{ mA}$	1, 2, 3	03XX	-240	240	mV
		$V_{\text{IN}} = -35 \text{ V},$ $5 \text{ mA} \leq I_L \leq 50 \text{ mA}$	1, 2, 3	03XX	-360	360	mV
Standby current drain	I_{SCD}	$V_{\text{IN}} = -17 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	03XX	0.5	3.0	mA
		$V_{\text{IN}} = -35 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	03XX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI_{SCD} (line)	$-35 \text{ V} \leq V_{\text{IN}} \leq -15 \text{ V},$ $I_L = 5 \text{ mA}$	1, 2, 3	03XX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI_{SCD} (load)	$5 \text{ mA} \leq I_L \leq 500 \text{ mA},$ $V_{\text{IN}} = -17 \text{ V}$	1, 2, 3	03XX	-0.5	0.5	mA

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TABLE I. Electrical performance characteristics - Device type 03XX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -25\text{ V}$	1, 2, 3	03XX	0.00	1.50	A
		$V_{IN} = -35\text{ V}$	1, 2, 3	03XX	0.00	1.00	A
Peak output current	I_{PK}	$V_{IN} = -15\text{ V}$, forced $\Delta V_{OUT} = 1.13\text{ V}$	1, 2, 3	03XX	0.5	2.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -17\text{ V}$, $I_L = 125\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	03XX	50		dB
Output noise voltage	V_{NO}	$V_{IN} = -17\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 50\text{ mA}$	1	03XX		250	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -22\text{ V}$, $I_L = 500\text{ mA}$, $T_A = 25^{\circ}\text{C}$	1	03XX	-120	120	mV
Voltage start up	V_{START}	$V_{IN} = -27\text{ V}$, $R_L = 24\Omega$	1, 2, 3	03XX	-12.60	-11.40	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -17\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	03XX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -17\text{ V}$, $I_L = 50\text{ mA}$, $\Delta I_L = 200\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	03XX		2.5	mV/mA

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Device type 03YX.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V_{OUT}	$V_{\text{IN}} = -15 \text{ V}, I_L = 5 \text{ mA}, 1.0 \text{ A}$	1, 2, 3	03YX	-12.60	-11.40	V
		$V_{\text{IN}} = -27 \text{ V}, I_L = 5 \text{ mA}, 1.0 \text{ A}$	1, 2, 3	03YX	-12.60	-11.40	V
		$V_{\text{IN}} = -35 \text{ V}, I_L = 5 \text{ mA}, 0.1 \text{ A}$	1, 2, 3	03YX	-12.60	-11.40	V
		$V_{\text{IN}} = -17 \text{ V}, I_L = 5 \text{ mA},$ $T_A = 150^{\circ}\text{C}$	1, 2, 3	03YX	-12.72	-11.28	V
Line regulation	V_{RLINE}	$-35 \text{ V} \leq V_{\text{IN}} \leq -15 \text{ V},$ $I_L = 1.0 \text{ A}$	1, 2, 3	03YX	-360	360	mV
		$-32 \text{ V} \leq V_{\text{IN}} \leq -15 \text{ V},$ $I_L = 0.5 \text{ A}$	1, 2, 3	03YX	-120	120	mV
Load regulation	V_{RLOAD}	$V_{\text{IN}} = -17 \text{ V},$ $5 \text{ mA} \leq I_L \leq 1.0 \text{ A}$	1, 2, 3	03YX	-240	240	mV
		$V_{\text{IN}} = -35 \text{ V},$ $5 \text{ mA} \leq I_L \leq 0.1 \text{ A}$	1, 2, 3	03YX	-360	360	mV
Standby current drain	I_{SCD}	$V_{\text{IN}} = -17 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	03YX	0.5	3.0	mA
		$V_{\text{IN}} = -35 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	03YX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI_{SCD} (line)	$-32 \text{ V} \leq V_{\text{IN}} \leq -15 \text{ V},$ $I_L = 5 \text{ mA}$	1, 2, 3	03YX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI_{SCD} (load)	$5 \text{ mA} \leq I_L \leq 1.0 \text{ A},$ $V_{\text{IN}} = -17 \text{ V}$	1, 2, 3	03YX	-0.5	0.5	mA

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TABLE I. Electrical performance characteristics - Device type 03YX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -32\text{ V}$	1, 2, 3	03YX	0.00	3.50	A
		$V_{IN} = -35\text{ V}$	1, 2, 3	03YX	0.00	2.00	A
Peak output current	I_{PK}	$V_{IN} = -15\text{ V}$, forced $\Delta V_{OUT} = 1.13\text{ V}$	1, 2, 3	03YX	1.0	4.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -17\text{ V}$, $I_L = 350\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	03YX	50		dB
Output noise voltage	V_{NO}	$V_{IN} = -17\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 0.1\text{ A}$	1	03YX		600	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -22\text{ V}$, $I_L = 1.0\text{ A}$, $T_A = 25^{\circ}\text{C}$	1	03YX	-120	120	mV
Voltage start up	V_{START}	$V_{IN} = -27\text{ V}$, $R_L = 12\Omega$	1, 2, 3	03YX	-12.60	-11.40	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -17\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	03YX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -17\text{ V}$, $I_L = 100\text{ mA}$, $\Delta I_L = 400\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	03YX		2.5	mV/mA

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TABLE I. Electrical performance characteristics - Device type 04XX.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V_{OUT}	$V_{\text{IN}} = -18.5 \text{ V}, I_L = 5 \text{ mA}, 0.5 \text{ A}$	1, 2, 3	04XX	-15.75	-14.25	V
		$V_{\text{IN}} = -30 \text{ V}, I_L = 5 \text{ mA}, 0.5 \text{ A}$	1, 2, 3	04XX	-15.75	-14.25	V
		$V_{\text{IN}} = -35 \text{ V}, I_L = 5 \text{ mA}, 50 \text{ mA}$	1, 2, 3	04XX	-15.75	-14.25	V
		$V_{\text{IN}} = -20 \text{ V}, I_L = 5 \text{ mA},$ $T_A = 150^{\circ}\text{C}$	1, 2, 3	04XX	-15.90	-14.10	V
Line regulation	V_{RLINE}	$-35 \text{ V} \leq V_{\text{IN}} \leq -18.5 \text{ V},$ $I_L = 500 \text{ mA}$	1, 2, 3	04XX	-150	150	mV
Load regulation	V_{RLOAD}	$V_{\text{IN}} = -20 \text{ V},$ $5 \text{ mA} \leq I_L \leq 500 \text{ mA}$	1, 2, 3	04XX	-300	300	mV
		$V_{\text{IN}} = -35 \text{ V},$ $5 \text{ mA} \leq I_L \leq 50 \text{ mA}$	1, 2, 3	04XX	-450	450	mV
Standby current drain	I_{SCD}	$V_{\text{IN}} = -20 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	04XX	0.5	3.0	mA
		$V_{\text{IN}} = -35 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	04XX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI_{SCD} (line)	$-35 \text{ V} \leq V_{\text{IN}} \leq -18.5 \text{ V},$ $I_L = 5 \text{ mA}$	1, 2, 3	04XX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI_{SCD} (load)	$5 \text{ mA} \leq I_L \leq 500 \text{ mA},$ $V_{\text{IN}} = -20 \text{ V}$	1, 2, 3	04XX	-0.5	0.5	mA

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TABLE I. Electrical performance characteristics - Device type 04XX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -25\text{ V}$	1, 2, 3	04XX	0.00	1.50	A
		$V_{IN} = -35\text{ V}$	1, 2, 3	04XX	0.00	1.00	A
Peak output current	I_{PK}	$V_{IN} = -18.5\text{ V}$, forced $\Delta V_{OUT} = 1.43\text{ V}$	1, 2, 3	04XX	0.5	2.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -20\text{ V}$, $I_L = 125\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	04XX	50		dB
Output noise voltage	V_{NO}	$V_{IN} = -20\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 50\text{ mA}$	1	04XX		300	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -25\text{ V}$, $I_L = 500\text{ mA}$, $T_A = 25^{\circ}\text{C}$	1	04XX	-150	150	mV
Voltage start up	V_{START}	$V_{IN} = -30\text{ V}$, $R_L = 30\Omega$	1, 2, 3	04XX	-15.75	-14.25	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -20\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	04XX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -20\text{ V}$, $I_L = 50\text{ mA}$, $\Delta I_L = 200\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	04XX		2.5	mV/mA

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TABLE I. Electrical performance characteristics - Device type 04YX.

Test	Symbol	Conditions -55°C ≤ T _A ≤ +125°C unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V _{OUT}	V _{IN} = -18.5 V, I _L = 5 mA, 1.0 A	1, 2, 3	04YX	-15.75	-14.25	V
		V _{IN} = -30 V, I _L = 5 mA, 1.0 A	1, 2, 3	04YX	-15.75	-14.25	V
		V _{IN} = -35 V, I _L = 5 mA, 0.1 A	1, 2, 3	04YX	-15.75	-14.25	V
		V _{IN} = -20 V, I _L = 5 mA, T _A = 150°C	1, 2, 3	04YX	-15.90	-14.10	V
Line regulation	V _{RLINE}	-35 V ≤ V _{IN} ≤ -18.5 V, I _L = 0.5 A	1, 2, 3	04YX	-150	150	mV
Load regulation	V _{RLOAD}	V _{IN} = -20 V, 5 mA ≤ I _L ≤ 1.0 A	1, 2, 3	04YX	-300	300	mV
		V _{IN} = -35 V, 5 mA ≤ I _L ≤ 0.1 A	1, 2, 3	04YX	-450	450	mV
Standby current drain	I _{SCD}	V _{IN} = -20 V, I _L = 5 mA	1, 2, 3	04YX	0.5	3.0	mA
		V _{IN} = -35 V, I _L = 5 mA	1, 2, 3	04YX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI _{SCD} (line)	-35 V ≤ V _{IN} ≤ -18.5 V, I _L = 5 mA	1, 2, 3	04YX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI _{SCD} (load)	5 mA ≤ I _L ≤ 1.0 A, V _{IN} = -20 V	1, 2, 3	04YX	-0.5	0.5	mA

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TABLE I. Electrical performance characteristics - Device type 04YX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -20\text{ V}$	1, 2, 3	04YX	0.00	3.50	A
		$V_{IN} = -35\text{ V}$	1, 2, 3	04YX	0.00	2.00	A
Peak output current	I_{PK}	$V_{IN} = -18.5\text{ V}$, forced $\Delta V_{OUT} = 1.43\text{ V}$	1, 2, 3	04YX	1.0	4.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -20\text{ V}$, $I_L = 350\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	04YX	50		dB
Output noise voltage	V_{NO}	$V_{IN} = -20\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 0.1\text{ A}$	1	04YX		700	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -25\text{ V}$, $I_L = 1.0\text{ A}$, $T_A = 25^{\circ}\text{C}$	1	04YX	-150	150	mV
Voltage start up	V_{START}	$V_{IN} = -30\text{ V}$, $R_L = 15\Omega$	1, 2, 3	04YX	-15.75	-14.25	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -20\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	04YX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -20\text{ V}$, $I_L = 100\text{ mA}$, $\Delta I_L = 400\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	04YX		2.5	mV/mA

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TABLE I. Electrical performance characteristics - Device type 05XX.

Test	Symbol	Conditions -55°C ≤ T _A ≤ +125°C unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V _{OUT}	V _{IN} = -28 V, I _L = 5 mA, 0.5 A	1, 2, 3	05XX	-25.20	-22.80	V
		V _{IN} = -38 V, I _L = 5 mA, 0.5 A	1, 2, 3	05XX	-25.20	-22.80	V
		V _{IN} = -40 V, I _L = 5 mA, 50 mA	1, 2, 3	05XX	-25.20	-22.80	V
		V _{IN} = -30 V, I _L = 5 mA, T _A = 150°C	1, 2, 3	05XX	-25.44	-22.56	V
Line regulation	V _{RLINE}	-40 V ≤ V _{IN} ≤ -28 V, I _L = 50 mA	1, 2, 3	05XX	-720	720	mV
		-38 V ≤ V _{IN} ≤ -28 V, I _L = 350 mA	1, 2, 3	05XX	-240	240	mV
Load regulation	V _{RLOAD}	V _{IN} = -30 V, 5 mA ≤ I _L ≤ 500 mA	1, 2, 3	05XX	-480	480	mV
		V _{IN} = -40 V, 5 mA ≤ I _L ≤ 50 mA	1, 2, 3	05XX	-720	720	mV
Standby current drain	I _{SCD}	V _{IN} = -30 V, I _L = 5 mA	1, 2, 3	05XX	0.5	4.0	mA
		V _{IN} = -40 V, I _L = 5 mA	1, 2, 3	05XX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI _{SCD} (line)	-40 V ≤ V _{IN} ≤ -28 V, I _L = 5 mA	1, 2, 3	05XX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI _{SCD} (load)	5 mA ≤ I _L ≤ 500 mA, V _{IN} = -30 V	1, 2, 3	05XX	-0.5	0.5	mA

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TABLE I. Electrical performance characteristics - Device type 05XX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -30\text{ V}$	1, 2, 3	05XX	0.00	1.50	A
		$V_{IN} = -40\text{ V}$	1, 2, 3	05XX	0.00	1.00	A
Peak output current	I_{PK}	$V_{IN} = -28\text{ V}$, forced $\Delta V_{OUT} = 2.28\text{ V}$	1, 2, 3	05XX	0.5	2.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -30\text{ V}$, $I_L = 125\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	05XX	50		dB
Output noise voltage	V_{NO}	$V_{IN} = -30\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 50\text{ mA}$	1	05XX		500	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -34\text{ V}$, $I_L = 500\text{ mA}$, $T_A = 25^{\circ}\text{C}$	1	05XX	-240	240	mV
Voltage start up	V_{START}	$V_{IN} = -38\text{ V}$, $R_L = 48\Omega$	1, 2, 3	05XX	-25.20	-22.80	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -30\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	05XX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -30\text{ V}$, $I_L = 50\text{ mA}$, $\Delta I_L = 200\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	05XX		2.5	mV/mA

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TABLE I. Electrical performance characteristics - Device type 05YX.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V_{OUT}	$V_{\text{IN}} = -28 \text{ V}, I_L = 5 \text{ mA}, 1.0 \text{ A}$	1, 2, 3	05YX	-25.20	-22.80	V
		$V_{\text{IN}} = -38 \text{ V}, I_L = 5 \text{ mA}, 1.0 \text{ A}$	1, 2, 3	05YX	-25.20	-22.80	V
		$V_{\text{IN}} = -40 \text{ V}, I_L = 5 \text{ mA}, 0.1 \text{ A}$	1, 2, 3	05YX	-25.20	-22.80	V
		$V_{\text{IN}} = -30 \text{ V}, I_L = 5 \text{ mA},$ $T_A = 150^{\circ}\text{C}$	1, 2, 3	05YX	-25.44	-22.56	V
Line regulation	V_{RLINE}	$-40 \text{ V} \leq V_{\text{IN}} \leq -28 \text{ V},$ $I_L = 0.1 \text{ A}$	1, 2, 3	05YX	-200	200	mV
		$-38 \text{ V} \leq V_{\text{IN}} \leq -28 \text{ V},$ $I_L = 0.5 \text{ A}$	1, 2, 3	05XX	-100	100	mV
Load regulation	V_{RLOAD}	$V_{\text{IN}} = -30 \text{ V},$ $5 \text{ mA} \leq I_L \leq 1.0 \text{ A}$	1, 2, 3	05YX	-100	100	mV
		$V_{\text{IN}} = -40 \text{ V},$ $5 \text{ mA} \leq I_L \leq 0.1 \text{ A}$	1, 2, 3	05YX	-200	200	mV
Standby current drain	I_{SCD}	$V_{\text{IN}} = -30 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	05YX	0.5	4.0	mA
		$V_{\text{IN}} = -40 \text{ V}, I_L = 5 \text{ mA}$	1, 2, 3	05YX	0.5	4.0	mA
Standby current drain change vs. line voltage	ΔI_{SCD} (line)	$-40 \text{ V} \leq V_{\text{IN}} \leq -28 \text{ V},$ $I_L = 5 \text{ mA}$	1, 2, 3	05YX	-1.0	1.0	mA
Standby current drain change vs. load current	ΔI_{SCD} (load)	$5 \text{ mA} \leq I_L \leq 1.0 \text{ A},$ $V_{\text{IN}} = -30 \text{ V}$	1, 2, 3	05YX	-0.5	0.5	mA

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TABLE 1. Electrical performance characteristics - Device type 05YX - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output short circuit current	I_{OS}	$V_{IN} = -30\text{ V}$	1, 2, 3	05YX	0.00	3.00	A
		$V_{IN} = -40\text{ V}$	1, 2, 3	05YX	0.00	2.00	A
Peak output current	I_{PK}	$V_{IN} = -28\text{ V}$, forced $\Delta V_{OUT} = 2.28\text{ V}$	1, 2, 3	05YX	1.0	4.0	A
Ripple rejection	$\Delta V_{IN}/\Delta V_{OUT}$	$V_{IN} = -30\text{ V}$, $I_L = 350\text{ mA}$, $e_i = 1\text{ Vrms}$ at $f = 2400\text{ Hz}$	4, 5, 6	05YX	50		dB
Output noise voltage	V_{NO}	$V_{IN} = -30\text{ V}$, $T_A = 25^{\circ}\text{C}$, $I_L = 0.1\text{ A}$	1	05YX		1000	μVrms
Thermal regulation	V_{RTH}	$V_{IN} = -34\text{ V}$, $I_L = 1.0\text{ A}$, $T_A = 25^{\circ}\text{C}$	1	05YX	-240	240	mV
Voltage start up	V_{START}	$V_{IN} = -38\text{ V}$, $R_L = 24\Omega$	1, 2, 3	05YX	-25.20	-22.80	V
Line transient response	$\Delta V_{OUT}/\Delta V_{IN}$	$V_{IN} = -30\text{ V}$, $I_L = 5\text{ mA}$, $V_{PULSE} = -3.0\text{ V}$, $T_A = 25^{\circ}\text{C}$	4	05YX		30.0	mV/V
Load transient response	$\Delta V_{OUT}/\Delta I_L$	$V_{IN} = -30\text{ V}$, $I_L = 100\text{ mA}$, $\Delta I_L = 400\text{ mA}$, $T_A = 25^{\circ}\text{C}$	4	05YX		2.5	mV/mA

- 1/ Pulse-testing techniques are used to maintain the virtual junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a $2\text{ }\mu\text{F}$ capacitor across the input and a $1\text{ }\mu\text{F}$ capacitor across the output.
- 2/ Guaranteed, if not tested, to the limits specified in table I.

4.3.2 Groups C and D inspections.

a. End-point electrical parameters shall be as specified in table II herein.

b. Steady-state life test conditions, method 1005 of MIL-STD-883.

(1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.

(2) $T_A = +125^{\circ}\text{C}$, minimum.

(3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

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Device types	01			01, 03, 04, and 05	
Case outlines	H	P	2	X	Y <u>1/</u>
Terminal number	Terminal symbol				
1	NC	GROUND	NC	GROUND	GROUND
2	GROUND	NC	GROUND	OUTPUT	OUTPUT
3	NC	NC	NC	INPUT	---
4	NC	OUTPUT	NC	---	---
5	OUTPUT	NC	NC	---	---
6	NC	INPUT	NC	---	---
7	INPUT	NC	NC	---	---
8	NC	NC	NC	---	---
9	NC	---	NC	---	---
10	NC	---	OUTPUT	---	---
11	---	---	NC	---	---
12	---	---	NC	---	---
13	---	---	NC	---	---
14	---	---	NC	---	---
15	---	---	INPUT	---	---
16	---	---	NC	---	---
17	---	---	NC	---	---
18	---	---	NC	---	---
19	---	---	NC	---	---
20	---	---	NC	---	---

1/ Case is "INPUT" terminal.

FIGURE 1. Terminal connections.

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TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (in accordance with method 5005, table I)
Interim electrical parameters (method 5004)	---
Final electrical test parameters (method 5004)	1*, 2, 3, 4
Group A test requirements (method 5005)	1, 2, 3, 4, 5, 6
Groups C and D end-point electrical parameters (method 5005)	1

* PDA applies to subgroup 1.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for original equipment manufacturer application. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-38510, the device specified herein will be inactivated and will not be used for new design. The QPL-38510 product shall be the preferred item for all applications.

6.2 Replaceability. Replaceability is determined as follows:

- a. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.
- b. When a QPL source is established, the device specified in this drawing will be replaced by the microcircuit identified as PIN M38510/1150*B**.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronics devices (FSC 5962) should contact DESC-EC, telephone (513) 296-6047.

6.5 Comments. Comments on this drawing should be directed to DESC-EC, Dayton, Ohio 45444, or telephone (513) 296-5377.

6.6 Approved sources of supply. Approved sources of supply are listed in MIL-BUL-103. The vendors listed in MIL-BUL-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-EC.

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