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2N5954-2N5956, 2N6372-2N6374, 2N6465-2N6468, 40829-40831

Silicon N-P-N and P-N-P Medium-Power Transistors

General-Purpose Types for Switching Applications

2N5954, -2N5955, and -2N5956 are multiple-epitaxial p-n-p transistors. 2N6372, -2N6373, and -2N6374 are multiple-epitaxial n-p-n transistors. They are complements to 2N5954, 2N5955, and 2N5956.

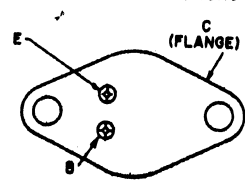
The 2N6465 and 2N6466 are multiple-epitaxial n-p-n transistors. They are complements to the 2N6467, and 2N6468, multiple-epitaxial p-n-p transistors. These devices differ in voltage ratings and in the currents at which the parameters are controlled.

All are supplied in the JEDEC TO-66 package.

Features:

- 2N5954-2N5956 complements to 2N6372-2N6374
- 2N6465, 2N6466 complements to 2N6467, 2N6468
- Low saturation voltages
- Maximum-safe-area-of-operation curves
- Thermal-cycle ratings
- Hermetically-sealed JEDEC TO-66 package

TERMINAL DESIGNATIONS

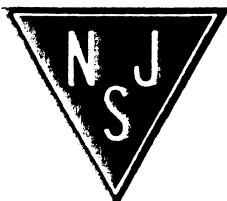


JEDEC TO-66

2N5954-2N5956 2N6372-2N6374, 2N6465-2N6468

MAXIMUM RATINGS, Absolute-Maximum Values:

	N-P-N 2N6374	2N6373	2N6372	2N6465	2N6466	
	P-N-P 2N5956 [†] 40831 [†]	2N5955 [†] 40830 [†]	2N5954 [†] 40829 [†]	2N6467 [†]	2N6468 [†]	
V_{CBO}	50	70	90	110	130	V
$V_{CEX(sus)}$ $V_{BE} = -1.5$ V, $R_{BE} = 100 \Omega$	50	70	90	110	130	V
$V_{CER(sus)}$ $R_{BE} = 100 \Omega$	45	65	85	105	125	V
$V_{CEO(sus)}$	40	60	80	100	120	V
V_{ESD}	5	5	5	5	5	V
I_C	6	6	6	4	4	A
I_B	2	2	2	2	2	A
T_J						
At T_C up to 25°C	40	40	40	40	40	W
	(2N6374)	(2N6373)	(2N6372)			
At T_A up to 25°C	5.8	5.8	5.8	—	—	W
	(40831)	(40830)	(40829)			
At T_C above 25°C	Derate linearly to 200°C					
T_J, T_{MS}	—65 to +200					°C
T_L						
At distances $\geq 1/32$ in. (0.8 mm) from seating plane for 10 s max.	+235					°C



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that data-sheets are current before placing orders.

2N6465-2N6468, 40829-40831

2N5954-2N5956, 2N6372-2N6374,

ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C unless otherwise specified

CHARACTERISTIC	TEST CONDITIONS				LIMITS						U N I T S
	VOLTAGE		CURRENT		2N6374 2N5956 40831		2N6373 2N5955 40830		2N6372 2N5954 40829		
	V dc		A dc								
	V _{CE}	V _{BE}	I _C	I _B	Min.	Max.	Min.	Max.	Min.	Max.	
I _{CE} R _{BE} =100 Ω	35 55 75				—	100	—	—	—	—	μA
I _{CEX} R _{BE} =100 Ω	45 65 85	—1.5 —1.5 —1.5			—	100	—	—	—	—	μA
R _{BE} =100 Ω, T _C =150°C	45 65 85	—1.5 —1.5 —1.5			—	2	—	—	—	—	mA
I _{CEO}	25 45 65				—	1	—	—	—	—	mA
I _{EBO}		—5			—	0.1	—	0.1	—	0.1	mA
h _{FE}	4 4 4 4		3 ^a 2.5 ^a 2 ^a 6 ^a		20 — — 5	100 — — —	— 20 — 5	— 100 — —	— — 20 5	— — 100 —	
V _{CEO(sus)}			0.1 ^a		40 ^b	—	60 ^b	—	80 ^b	—	V
V _{CER(sus)} R _{BE} =100 Ω			0.1 ^a		45 ^b	—	65 ^b	—	85 ^b	—	
V _{CEX(sus)} R _{BE} =100 Ω		—1.5	0.1 ^a		50 ^b	—	70 ^b	—	90 ^b	—	
V _{BE} All types All types All types 2N6372-2N6374	4 4 4 4		3 ^a 2.5 ^a 2 ^a 6 ^a		— — — —	2 — — 3	— — — —	— 2 — 3	— — — —	— — 2 3	V
V _{CE(sat)}			3 ^a 2.5 ^a 2 ^a	0.3 0.25 0.2	— — —	1 — —	— — —	— 1 —	— — —	— — 1	V
h _{fe} f=1 MHz 2N6372-2N6374 2N5954-56, 40829-31	4 —4		1 —1		4 5	— —	4 5	— —	4 5	— —	
h _{fe} f=1 kHz	4		0.5		25	—	25	—	25	—	
R _{θJC} 2N5954-56, 2N6372-74					—	4.3	—	4.3	—	4.3	°C/W
R _{θJA} 40829-40831					—	30	—	30	—	30	

ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C
unless otherwise specified

CHARACTERISTIC	TEST CONDITIONS				LIMITS				UNITS
	VOLTAGE V dc		CURRENT A dc		2N6465 2N6467♦		2N6486 2N6468♦		
	V _{CE}	V _{BE}	I _C	I _B	Min.	Max.	Min.	Max.	
I _{CER} R _{BE} = 100 Ω	95 100				—	100	—	—	μA
I _{CEX} R _{BE} = 100 Ω	100 120	—1.5 —1.5			—	100	—	—	μA
R _{BE} = 100 Ω, T _C = 150°C	100 120	—1.5 —1.5			—	2	—	—	mA
I _{CEO}	50 60				—	1	—	—	mA
I _{EBO}		—5			—	0.1	—	0.1	mA
h _{FE}	4 4		1.5 ^a 4 ^a		15 5	150 —	15 5	150 —	
V _{CEO(sus)}			0.1 ^a		100 ^b	—	120 ^b	—	V
V _{CER(sus)} R _{BE} = 100 Ω			0.1 ^a		105 ^b	—	125 ^b	—	
V _{CEX(sus)} R _{BE} = 100 Ω		—1.5	0.1 ^a		110 ^b	—	130 ^b	—	
V _{BE}	4 4		1.5 ^a 4 ^a		— —	2 3.5	— —	2 3.5	V
V _{CE(sat)} All types 2N6465–2N6466 2N6467–2N6468			1.5 ^a 4 ^a —4 ^a	0.15 0.8 —0.8	— — —	1.2 3* —4*	— — —	1.2 3* —4*	V
h _{fe} f = 1 MHz	4		1		5	—	5	—	
h _{fe} f = 1 kHz	4		0.5		25	—	25	—	
R _{θJC}					—	4.3	—	4.3	°C/W

* In accordance with JEDEC registration data format JS-6 RDP-2.

♦ For p-n-p devices, voltage and current values are negative.

^a Pulsed, pulse duration = 300 μs, duty factor = 1.8%

^b CAUTION: Sustaining voltages V_{CEO(sus)}, V_{CER(sus)}, and V_{CEX(sus)} MUST NOT be measured on a curve tracer.

