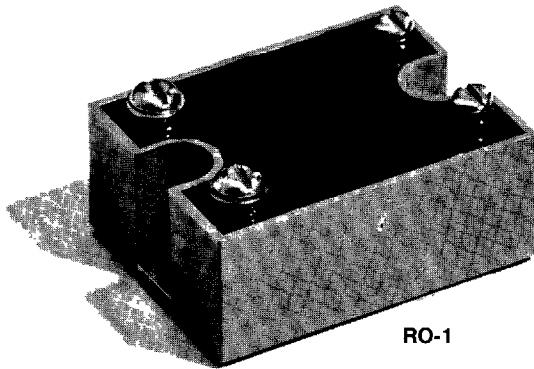
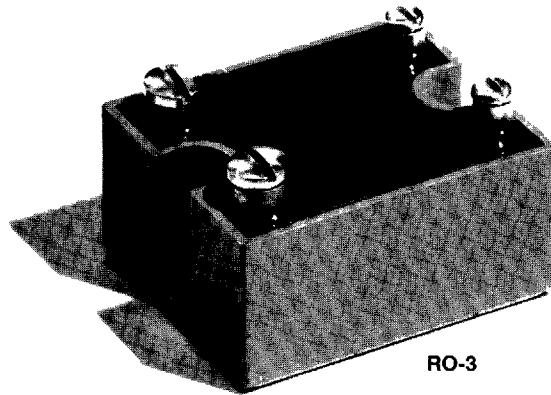


SOLID-STATE RELAYS



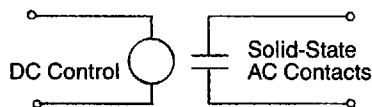
RO-1



RO-3

NATIONAL PART NO. Zero Cross switching Random switching	D2410Z D2410R	D4810Z	D2425Z D2425R	D4825Z	D2440Z D2440R	D4840Z	D2475Z D2475R	D4875Z	D24110Z D24110R	D48110Z
I _{RMS} Current rating (RMS Amps)	10		25		40		75		110	
Voltage range (RMS volts)	48-280	180-530	48-280	180-530	48-280	180-530	48-280	180-530	48-280	180-530
Transient voltage (PK volts)	500	1200	500	1200	500	1200	500	1200	500	1200
I _{TSM} Peak one cycle surge current (PK Amps)	150		300		650		1000		2000	
I ² t For fusing at 8.3 msec (A ² sec)	95		375		1750		4150		16000	
V _{TM} Max peak on-state volts @ peak amps, T _J = 25°C	1.5		1.6		1.6		1.7		1.5	
dv/dt Min. rate of voltage rise (V/μsec)	200		200		200		200		200	
Control voltage range (DC volts)	3-32		3-32		3-32		3-32		3-32	
Control input impedance (OHMS)	1000-1800		1000-1800		1000-1800		1000-1800		1000-1800	
Turn-On Min. control (volts)	3.0		3.0		3.0		3.0		3.0	
Turn-Off Max control (volts)	1.0		1.0		1.0		1.0		1.0	
Isolation voltage (RMS)	2500		2500		2500		2500		2500	
R _{θJC} Thermal impedance Junction-to-case (°C/W)	.9		.7		.5		.2		.18	
T _J Max junction operating temperature °C	125		125		125		125		125	
Ambient temperature range °C	-30 to +80		-30 to +80		-30 to +80		-30 to +80		-30 to +80	
Package Outline Number	RO-1		RO-1		RO-1		RO-3		RO-3	

Circuit



OUTLINE DRAWINGS

OUTLINE DRAWINGS

DO-200AA

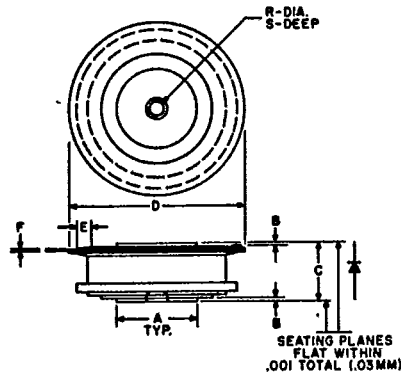
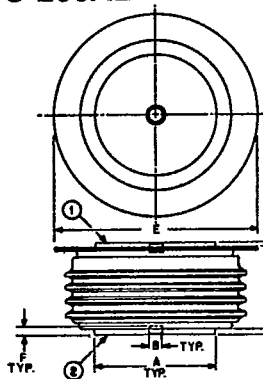


TABLE OF DIMENSIONS
Conversion Table

SYM	DECIMAL INCHES		METRIC MM	
	MIN.	MAX.	MIN.	MAX.
A	.744	.752	18.89	19.10
B	.030	.060	.76	1.52
C	.515	.565	13.06	14.35
D	1.600	1.656	40.64	42.06
E	.110	-	2.79	-
F	.031	.017	.33	.43
R	.135	.145	3.42	3.68
S	.067	.063	1.70	2.11

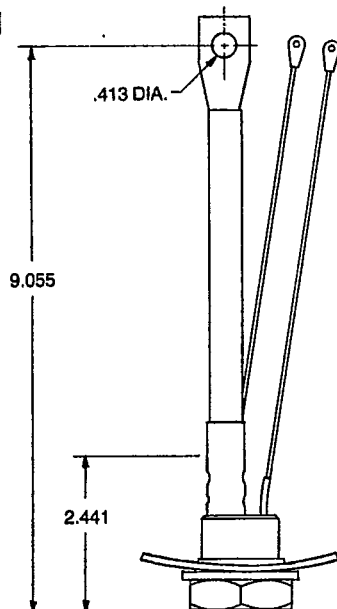
DO-200AB



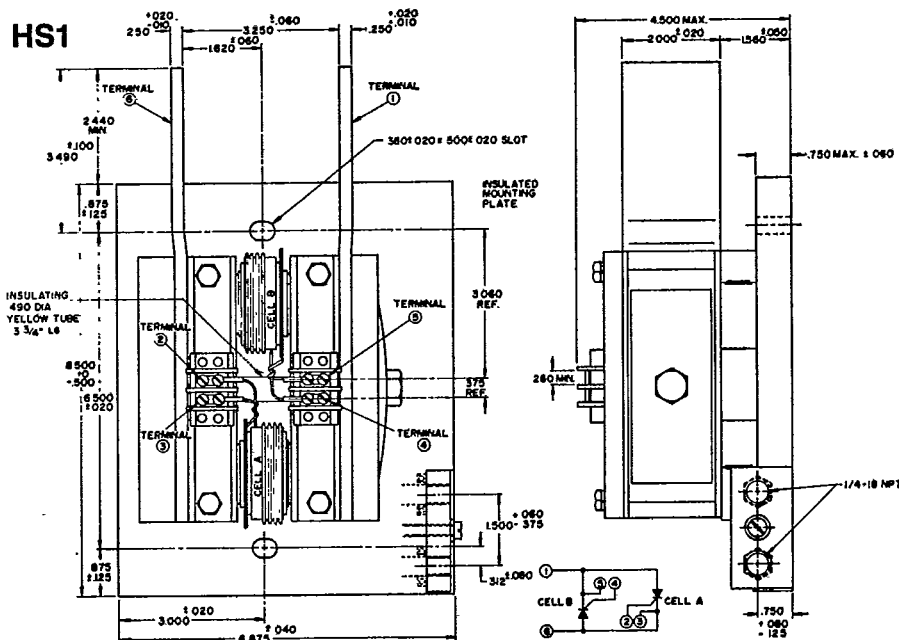
T-91-20

SYM	INCHES		METRIC MM	
	MIN.	MAX.	MIN.	MAX.
A	1.333	1.343	33.86	34.11
B	1.35	1.45	34.2	36.8
C	1.018	1.065	25.85	27.06
D	0.30	1.10	.76	-
E	2.240	2.300	56.89	58.42
F	0.70	0.90	3.55	4.06

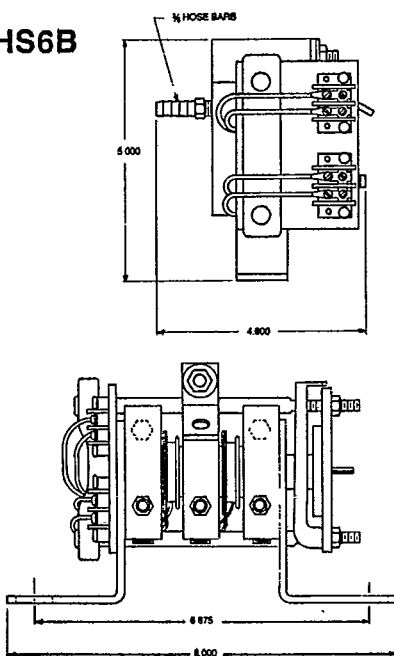
F-1



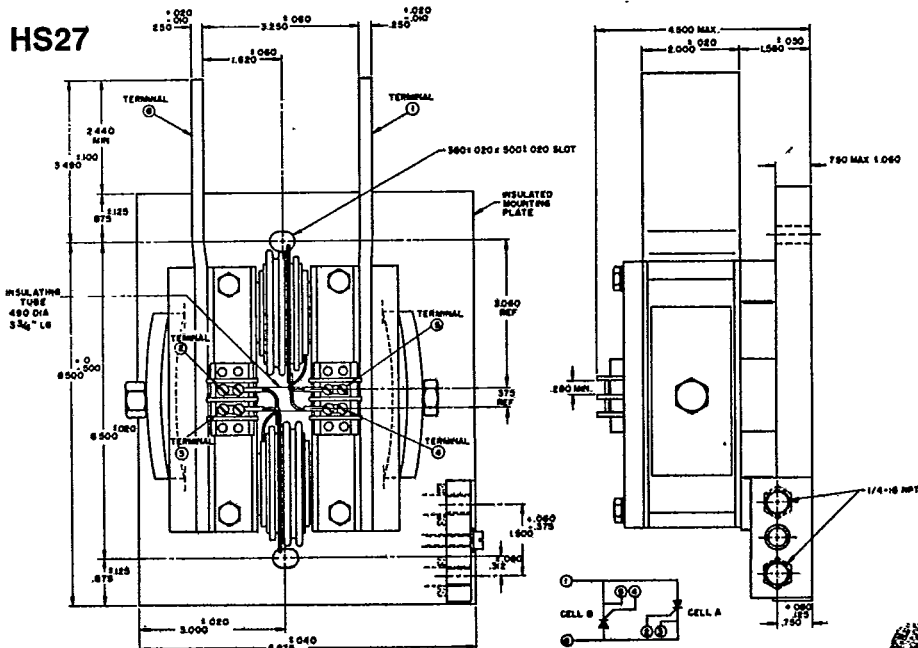
HS1



HS6B



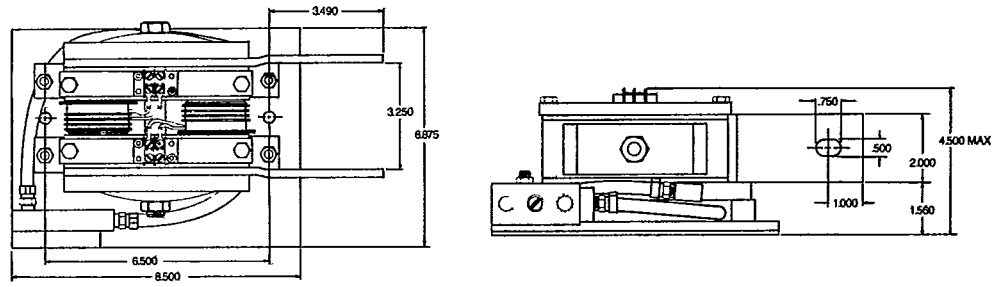
HS27



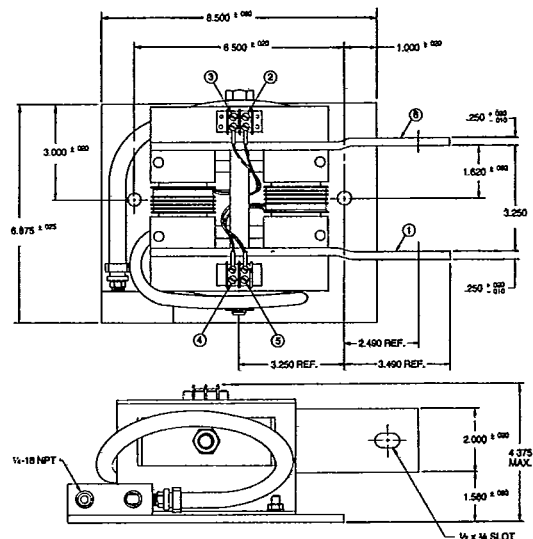
OUTLINE DRAWINGS

T-91-20

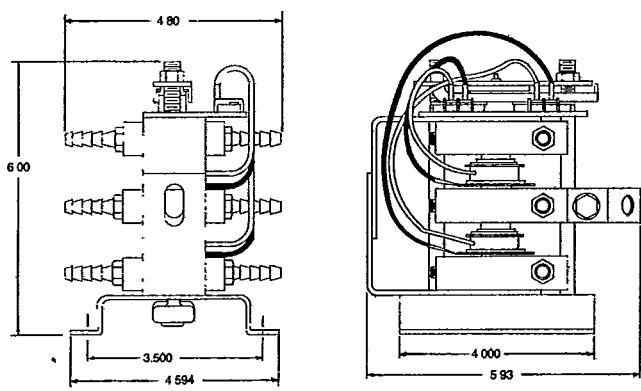
HS69



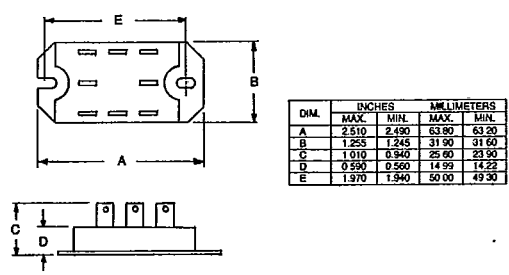
HS82



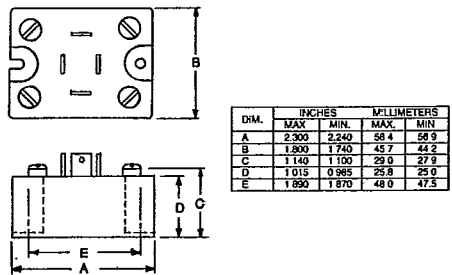
HS86



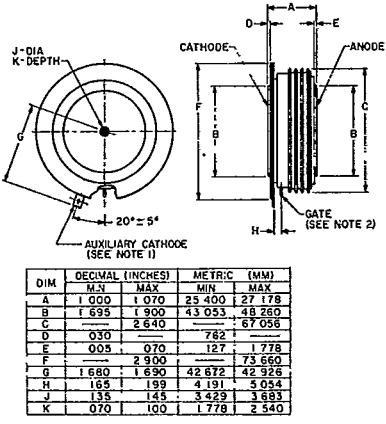
MO-11, MO-12



MO-13, MO-14

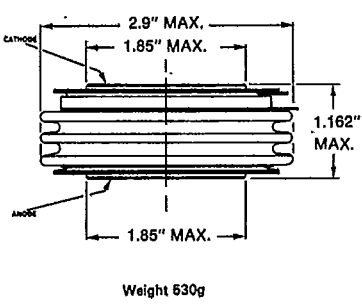


P-4

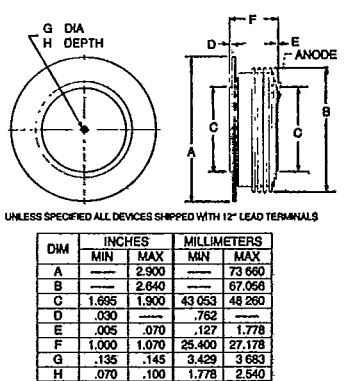


NOTES
1 USES AMP #4280-2 FAST-ON OR EQUIVALENT
2 USES AMP #6059B-1 CONNECTOR OR EQUIVALENT
3 UNLESS SPECIFIED ALL DEVICES WILL BE SHIPPED WITH 12" LEADS WITH RING TERMINALS

P-7



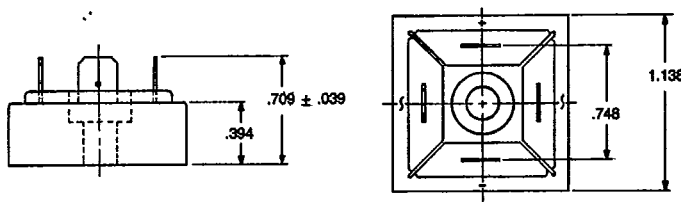
P-9



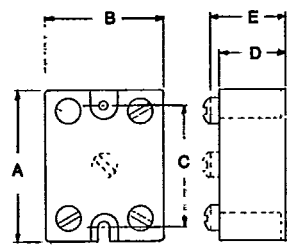
OUTLINE DRAWINGS

T-91-20

RB-1

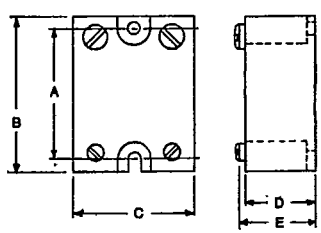


RB-2, RB-3



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	2.240	2.300	56.9	58.4
B	1.740	1.800	44.2	45.7
C	1.870	1.890	47.5	48.0
D	0.985	1.015	25.0	25.8
E	1.100	1.140	27.9	29.0

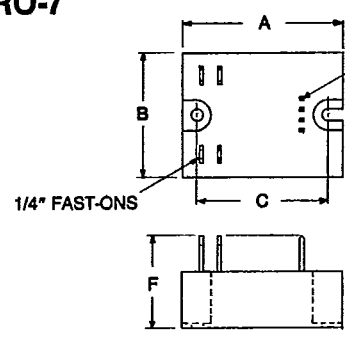
RO-1, RO-3, RO-5



SOLID STATE RELAY

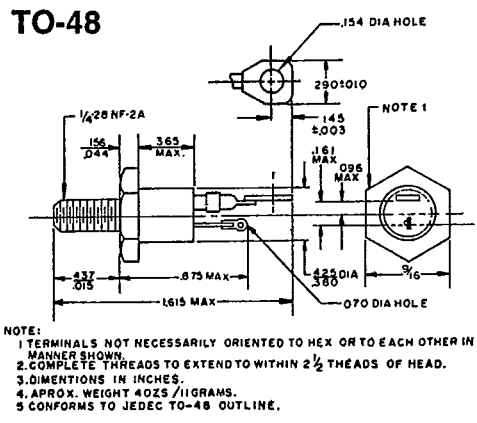
Dim.	RO-1		RO-2		RO-5	
	Dec.	MM	Dec.	MM	Dec.	MM
A	1.87	47.5	1.87	47.5	1.87	47.5
B	2.25	57.2	2.25	57.2	2.25	57.2
C	1.75	44.45	1.75	44.45	1.75	44.45
D	0.93	23.62	0.92	20.83	.75	19.0
E	1.10	27.94	0.90	22.86	.875	22.2

RO-7

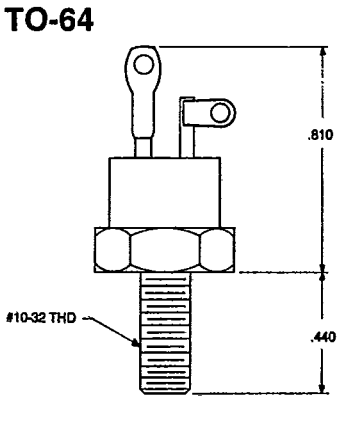


DIM	INCHES	MM
A	2.250	57.20
B	1.750	44.45
C	1.870	47.50
D	0.820	20.83
E	1.445	36.70
F	1.320	33.53

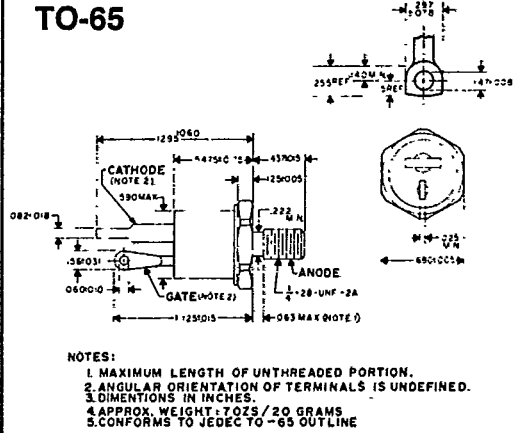
TO-48



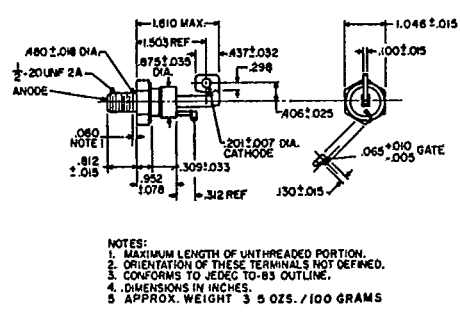
TO-64



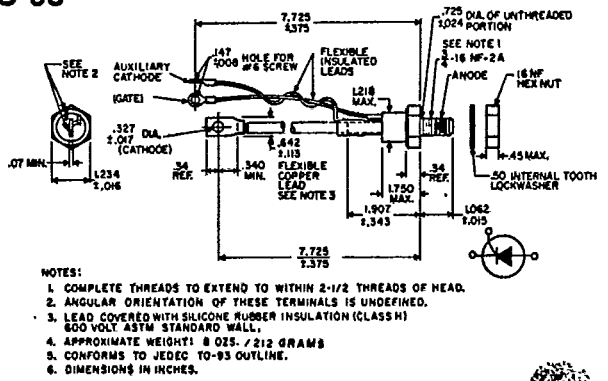
TO-65



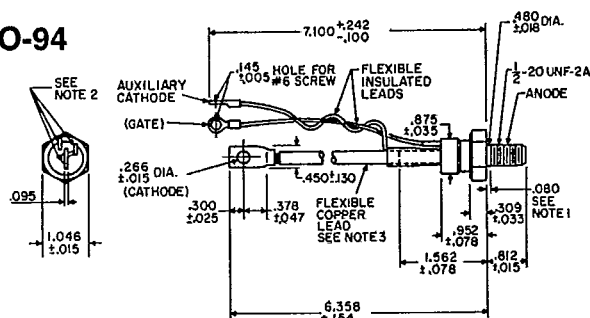
TO-83



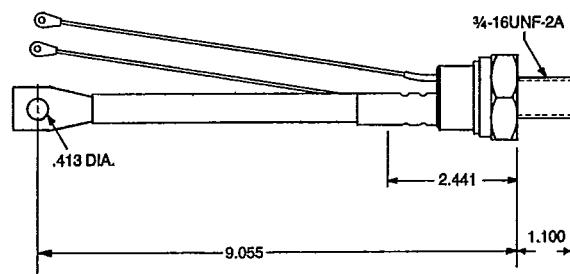
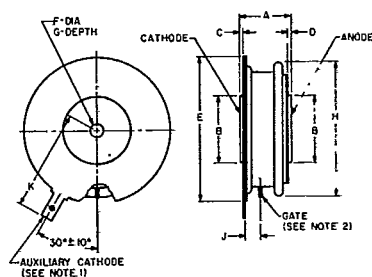
TO-93



OUTLINE DRAWINGS

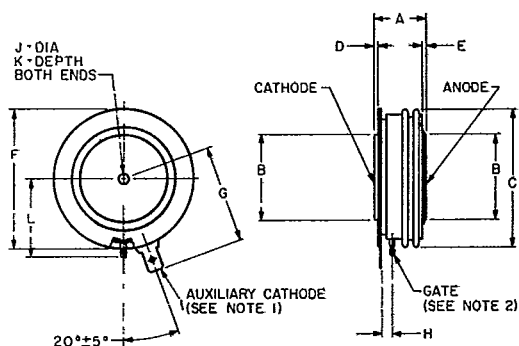
TO-94


- NOTES:
 1. MAXIMUM LENGTH OF UNTHREADED PORTION.
 2. ORIENTATION OF THESE TERMINALS IS UNDEFINED.
 3. LEAD COVERED WITH SILICONE RUBBER INSULATION (CLASS H) 600 VOLT ASTM STANDARD WALL.
 4. CONFORMS TO JEDEC TO-94 OUTLINE.
 5. DIMENSIONS IN INCHES.
 6. APPROX. WEIGHT 3.5 OZS./100 GRAMS

TO-118

TO-200AB


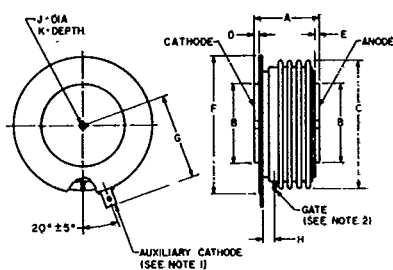
DIM	DECIMAL (INCHES)		METRIC (MM)	
	MIN	MAX	MIN	MAX
A	.525	.575	13.335	14.605
B	.746	.754	18.948	19.152
C	.030	.060	.762	1.524
D	.030	.060	.762	1.524
E	1.580	1.655	40.132	42.037
F	.135	.145	3.420	3.680
G	.068	.082	1.727	2.083
H	1.380	1.460	35.052	37.084
J	.155	.175	3.937	4.445
K	—	1.150	—	29.210

- NOTES:
 1. USES AMP #42801-2 FAST-ON OR EQUIVALENT
 2. USES AMP #60354-2 CONNECTOR OR EQUIVALENT
 3. APPROX WEIGHT 1.8 OZ / 50 GRAMS

TO-200AB-2


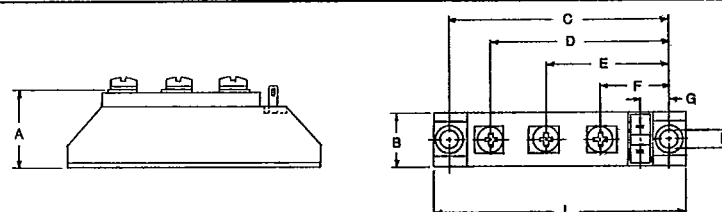
DIM	DECIMAL (INCHES)		METRIC (MM)	
	MIN	MAX	MIN	MAX
A	.560	.605	14.224	15.367
B	.985	.995	25.019	25.273
C	—	1.585	—	40.259
D	.040	—	1.016	—
E	.030	—	.762	—
F	1.600	1.650	40.640	41.910
G	—	1.120	—	28.448
H	.130	.170	3.302	4.318
J	.135	.145	3.429	3.683
K	.070	.100	1.778	2.540
L	—	.875	—	22.225

- NOTES:
 1. USES AMP #42801-2 FAST-ON OR EQUIVALENT
 2. USES AMP #60598-1 CONNECTOR OR EQUIVALENT
 3. UNLESS SPECIFIED ALL DEVICES WILL BE SHIPPED WITH 12" LEADS WITH RING TERMINALS

TO-200AC


DIM	DECIMAL (INCHES)		METRIC (MM)	
	MIN	MAX	MIN	MAX
A	1.000	1.065	25.400	27.051
B	1.336	1.350	33.934	34.290
C	—	2.100	—	53.340
D	.020	.105	.508	2.667
E	.030	.080	.762	2.032
F	2.246	2.251	57.040	57.170
G	1.399	1.409	35.530	35.780
H	.165	.185	4.190	4.690
J	.135	.145	3.420	3.680
K	.062	.072	1.570	1.820

- NOTES:
 1. USES AMP #42801-2 FAST-ON OR EQUIVALENT
 2. USES AMP #60598-1 CONNECTOR OR EQUIVALENT
 3. UNLESS SPECIFIED ALL DEVICES WILL BE SHIPPED WITH 12" LEADS WITH RING TERMINALS
 4. APPROX WEIGHT 8 OZ / 230 GRAMS

TO-240AA


DIM	DEC	MM	DIM	DEC	MM
A	1.181	30	F	.964	25
B	.787	20	G	.433	11
C	3.150	80	H	.252	6.4
D	2.559	65	I	3.622	92
E	1.772	45			