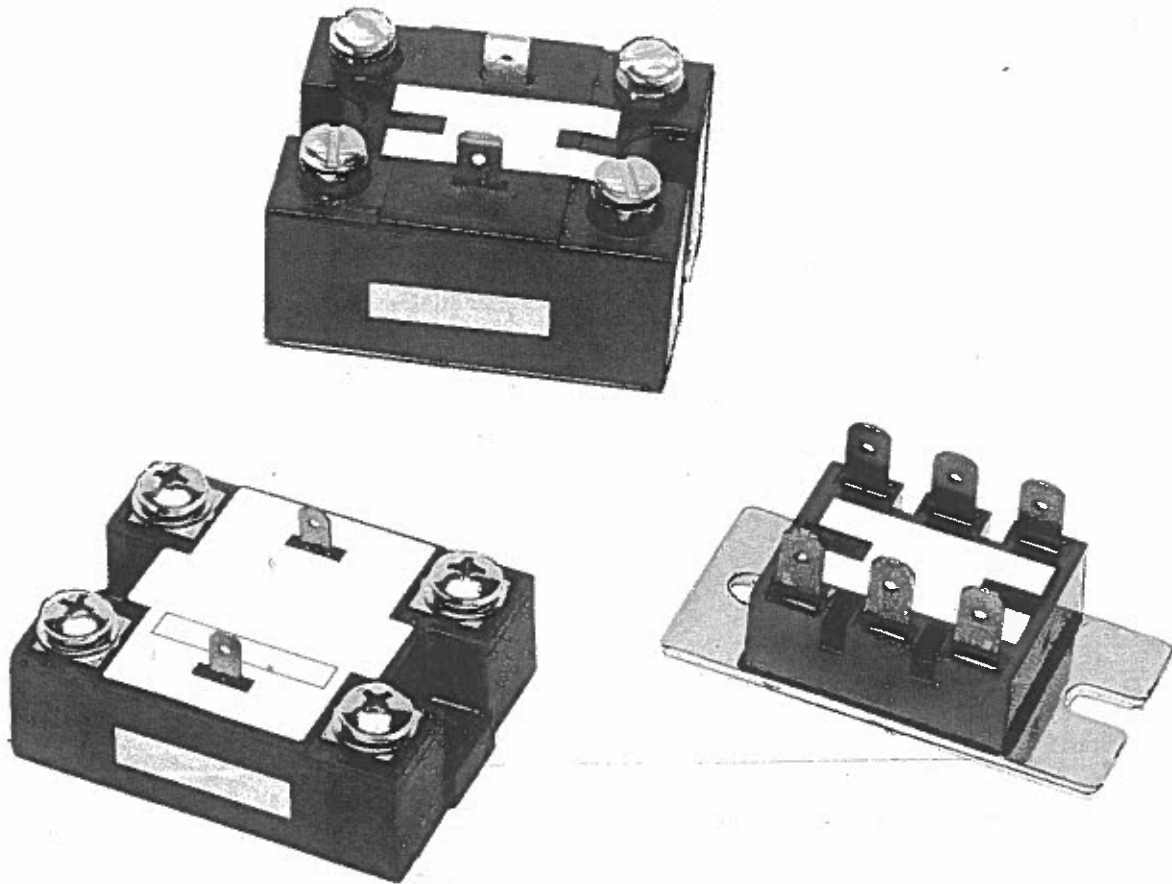


M25, M50, ES & T Series SCR Bridge Circuits



25 amps to
110 amps

electrical specifications

		PACKAGE TYPE				
		T5	ES6,T6	ES7	ES8	ES9
I_d	maximum dc output current @ 85° Tc(A) full bridge	25	42.5	50	60	80
I_T (RMS)	maximum output current @ 85°C ceramic base SCR ratings (Circuit 5 only)	25	55	60	75	110
V_{TM}	maximum peak on-state voltage amperes peak (SCR)	1.8V 25A	1.6V 40A	2.5V 60A	2.5V 75A	2.5V 110A
V_{FM}	maximum peak forward voltage amperes peak (rectifier)	1.65V 25A	1.50V 40A	2.5 60A	2.5 75A	2.5 110A
I_H	typical holding current	200mA	200mA	250mA	250mA	250mA
T_J	operating junction temperature range	-25°C to 125°C				
di/dt	critical rate of rise of on-state current @ $T_J=125^\circ\text{C}$ (A/ μS)	100	100	100	100	100
dv/dt ①	critical rate of rise of off-state voltage @ $T_J=125^\circ\text{C}$ (V/ μS)	200	200	200	200	200
V_{RMS}	AC line input voltage (V)	-1 -2 -3 -4	120 240 280 480	120 240 280 480	120 240 280 480	120 240 280 480
I_{TSM}	maximum non-repetitive surge current (A)	300	600	1000	1200	2000
I^2t	maximum I^2t for fusing $t=8.3(A^2 \text{ sec})$	370	1500	1500	4150	16000
I_{GT}	maximum required gate current to trigger, 25°C(mA)	100	100	120	120	150
I_{GT}	typical gate current to trigger	20mA	20mA	50mA	50mA	75mA
I_{GM}	maximum peak gate current	3.0A	3.0A	4.0A	4.0A	5.0A
V_{GT}	maximum required gate voltage to trigger, 25°C(V)	2.5	2.5	3.0	3.0	3.0
V_{GT}	typical gate voltage to trigger	0.9V	0.9V	1.0V	1.25V	1.25V
V_{GD}	maximum non-triggering gate voltage at $T_J=125^\circ\text{C}$	0.2V	0.2V	0.25V	0.25V	0.3V
P_{GM}	maximum peak gate power, $t_p=10\mu\text{Sec.}$	5W	5W	7W	7W	10W
$P_{G(AV)}$	average gate power	0.5W	0.5W	1W	2W	2W
V_{GM}	maximum peak gate voltage (reverse)	5.0V	5.0V	5.0V	5.0V	5.0V
$R_{\theta CS}$ ②	maximum thermal resistance case to sink (°C/W)	0.10	0.10	0.10	0.10	0.10
$R_{\theta JC}$	typical thermal resistance junction to ceramic plate per device	.4°C/W .35°C/W				

Ms

**SEE PAGE 101
FOR MOUNTING REQUIREMENTS**

① Higher dv/dt available. Isolation voltage from terminals to mounting plate...
2500 volts RMS/min.

② Case to sink, mounting surface smooth, flat, and greased (Roca) (.002 T.I.R.
flatness spec. and a 50 micro-inch finish).

part number assignment

Each part number consists of 4 to 7 digits. Use this table to determine the package that fits your needs.

1st Digit Series Type	2nd Digit Current	3rd Digit Circuit Type	4th Digit AC Line Voltage	Options
T ES	5-25 amps 6-42.5 amps 7-60 amps† 8-75 amps† 9-110 amps†	1-9 (see schematic diagrams)	1-120 volts 2-240 volts 3-280 volts 4-480 volts	F-Free Wheeling Diode Option S-Suppressor Option* E-External Mounting of Suppressor C-Gate to cathode capacitor option. Consult factory.

† ES Package only and Ckt. 5-9 only

*ES Series available with external suppressor (option SE) only

	diagrams	ES series terminal orientation	T series terminal orientation
1			
2			
3			
4			
5			
6			
7			
8			
9			