

MSS40 / MSS50 Series

BACK TO BACK SCR MODULE

The MSS40 / MSS50 Series is based on two back-to-back SCR configurations, providing high noise immunity. They are suitable for high power applications. The compactness of the SOT-227 package allows high power density and optimized power bus connections. Compliance to RoHS.

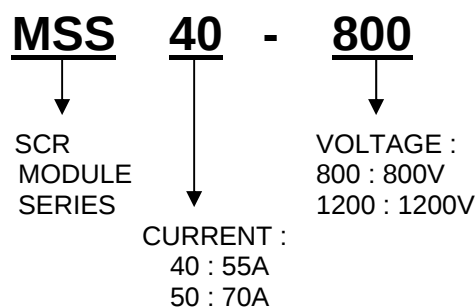
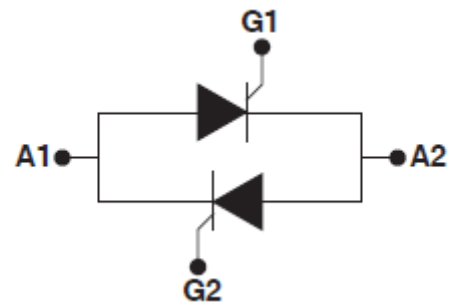
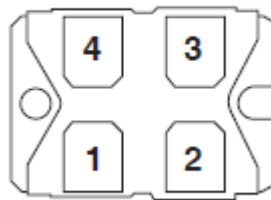


SOT-227

MAIN FEATURES

- $I_{T(RMS)}$: 55 and 70 A
- V_{DRM}/V_{RRM} : 800 and 1200 V
- I_{GT} : 50 mA

- 1 : Thyristor 2 Anode (A2)
- 2 : Thyristor 2 Gate (G2)
- 3 : Thyristor 1 Anode (A1)
- 4 : Thyristor 1 Gate (G1)



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ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value		Unit
				MSS40	MSS50	
I _{T(RMS)}	RMS on-state current		T _C = 80 °C	55	-	A
			T _C = 85 °C	-	70	
I _{TSM}	Non repetitive surge peak on-state current	t _p = 16.7ms	T _j = 25 °C	420	630	A
		t _p = 20ms		400	600	
I ² t	I ² t Value for fusing	t _p = 10ms	T _j = 25 °C	800	1800	A ² s
DI/dt	Critical rate of rise of on-state current I _G = 2xI _{GT} , tr ≤ 100ns	F = 120Hz	T _j = 125 °C	50		A/μs
I _{GM}	Peak gate current	t _p = 20μs	T _j = 125 °C	4		A
P _{G(AV)}	Average gate power dissipation		T _j = 125 °C	1		W
T _j	Operating junction temperature range			-40 to +125		°C
T _{stg}	Storage junction temperature range			-40 to +150		
V _{RGM}	Maximum peak reverse gate voltage			5		V

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
$R_{th(j-c)}$	Junction to case (AC)	MSS40	0.6	$^{\circ}\text{C}/\text{W}$
		MSS50	0.45	

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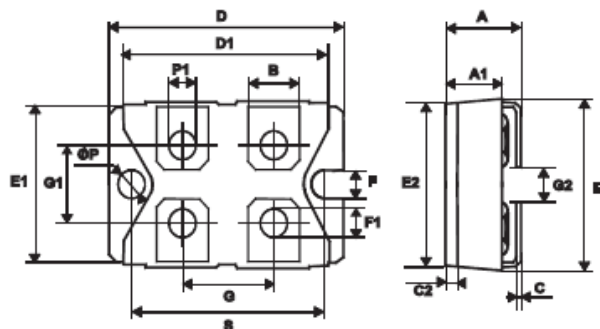
ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Test Conditions			Min	Typ	Max	Unit
I _{DRM}	V _{DRM} = V _{DRM} Rated	T _j = 25 °C	MSS40	-	-	20	μA
			MSS50				
		T _j = 125 °C	MSS40	-	-	10	mA
			MSS50				
I _{RRM}	V _{RRM} = V _{RRM} Rated	T _j = 25 °C	MSS40	-	-	20	μA
			MSS50				
		T _j = 125 °C	MSS40	-	-	10	mA
			MSS50				
I _{GT}	V _D = 12 V, R _L = 33 Ω		MSS40	5	-	50	mA
			MSS50				
V _{GT}	V _D = 12 V, R _L = 33 Ω		MSS40	-	-	1.3	V
			MSS50				
V _{GD}	V _D = V _{DRM} , R _L = 3.3 kΩ	T _j = 125 °C	MSS40	0.2	-	-	V
			MSS50				
I _H	I _T = 500 mA Gate open		MSS40	-	-	80	mA
			MSS50				
V _{TM}	I _{TM} = 80A t _p = 380 μs	T _j = 25 °C	MSS40	-	-	1.7	V
	I _{TM} = 100A t _p = 380 μs		MSS50	-	-	1.7	
I _L	I _G = 1.2xI _{GT}		MSS40	-	-	120	mA
			MSS50				
dV/dt	V _D = 67% V _{DRM} Gate open	T _j = 125 °C	MSS40	1000	-	-	V/μs
			MSS50				
V _{t0}	Threshold voltage	T _j = 125 °C	MSS40	-	-	0.85	V
			MSS50				
R _d	Dynamic resistance	T _j = 125 °C	MSS40	-	-	11	mΩ
			MSS50	-	-	7	

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MECHANICAL DATA CASE SOT-227



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	11.80	12.20	0.465	0.480
A1	8.90	9.10	0.350	0.358
B	7.8	8.20	0.307	0.323
C	0.75	0.85	0.030	0.033
C2	1.95	2.05	0.077	0.081
D	37.80	38.20	1.488	1.504
D1	31.50	31.70	1.240	1.248
E	25.15	25.50	0.990	1.004
E1	23.85	24.15	0.939	0.951
E2	24.80 typ.		0.976 typ.	
G	14.90	15.10	0.587	0.594
G1	12.60	12.80	0.496	0.504
G2	3.50	4.30	0.138	0.169
F	4.10	4.30	0.161	0.169
F1	4.60	5.00	0.181	0.197
P	4.00	4.30	0.157	0.69
P1	4.00	4.40	0.157	0.173
S	30.10	30.30	1.185	1.193

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