

Single Thyristor Module

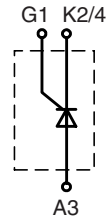
$$I_{TRMS} = 121 \text{ A}$$

$$V_{RRM} = 1200-1600 \text{ V}$$

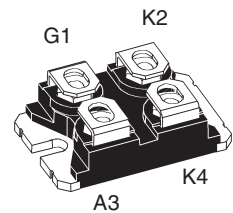
$$I_{TAV} = 77 \text{ A}$$

Preliminary data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1200	1200	MCO 75-12io1
1600	1600	MCO 75-16io1



miniBLOC, SOT-227 B



Symbol	Conditions		Maximum Ratings	
I _{TRMS}	T _{VJ} = T _{VJM}		121	A
I _{TAV}	T _C = 80°C; (180° sine)		77	A
I _{TSM}	T _{VJ} = 45°C; V _R = 0	t = 10 ms (50 Hz), sine	1070	A
		t = 8.3 ms (60 Hz), sine	1150	A
	T _{VJ} = T _{VJM} V _R = 0	t = 10 ms (50 Hz), sine	950	A
		t = 8.3 ms (60 Hz), sine	1000	A
I ² t	T _{VJ} = 45°C V _R = 0	t = 10 ms (50 Hz), sine	5700	A ² s
		t = 8.3 ms (60 Hz), sine	5550	A ² s
	T _{VJ} = T _{VJM} V _R = 0	t = 10 ms (50 Hz), sine	4500	A ² s
		t = 8.3 ms (60 Hz), sine	4200	A ² s
(di/dt) _{cr}	T _{VJ} = T _{VJM} f = 50 Hz, t _p = 200 μs V _D = 2/3 V _{DRM} I _G = 0.3 A di _G /dt = 0.3 A/μs	repetitive, I _T = 150 A	150	A/μs
		non repetitive, I _T = I _{TAVM}	500	A/μs
(dv/dt) _{cr}	T _{VJ} = T _{VJM} ; R _{GK} = ∞; method 1 (linear voltage rise)	V _{DR} = 2/3 V _{DRM}	1000	V/μs
P _{GM}	T _{VJ} = T _{VJM} I _T = I _{TAVM}	t _p = 30 μs	10	W
		t _p = 300 μs	5	W
P _{GAVM}			0.5	W
V _{RGM}			10	V
T _{VJ}			-40...+150	°C
T _{VJM}			150	°C
T _{stg}			-40...+150	°C
V _{ISOL}	50/60 Hz, RMS;	I _{ISOL} ≤ 1 mA	2500	V~
M _d	Mounting torque (M4)		1.1 - 1.5 / 9 - 13 Nm/lb.in.	
	Terminal connection torque (M4)		1.1 - 1.5 / 9 - 13 Nm/lb.in.	
Weight	typ.		30	g

Data according to IEC 60747 and to a single thyristor/diode unless otherwise stated.

Features

- International standard package miniBLOC (ISOTOP compatible)
- Isolation voltage 2500 V~
- Planar passivated chips

Applications

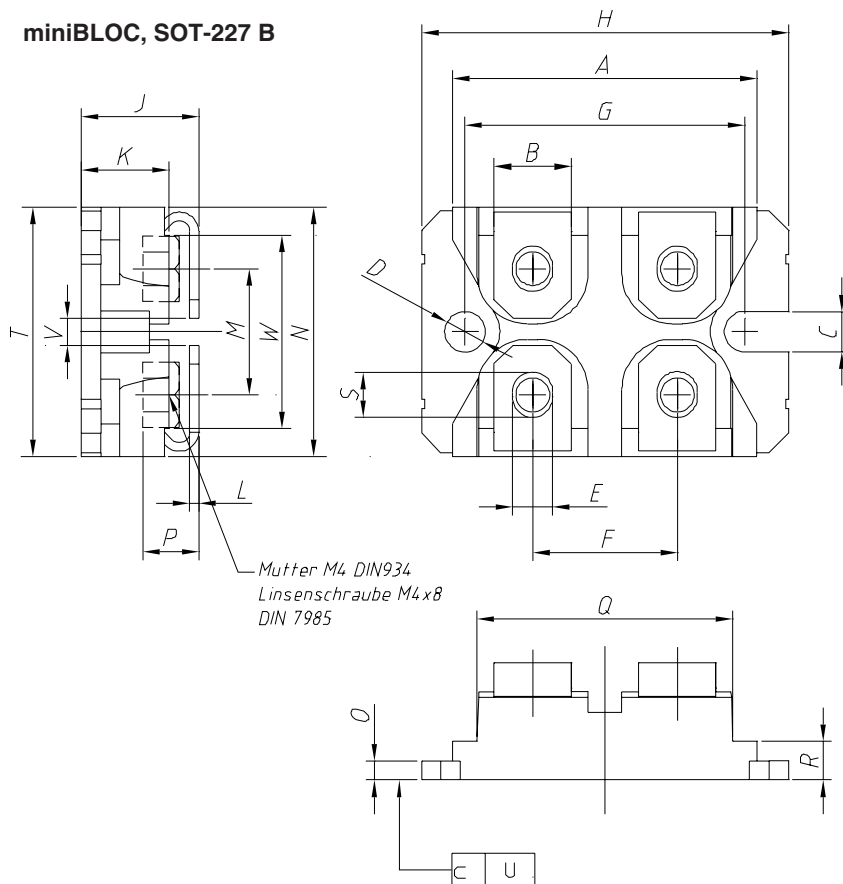
- Solid state switches
- motor control
- soft starter
- light and temperature control

Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling
- High power density

Symbol	Conditions	Characteristic Values		
I_{RRM} / D_{RM}	$T_{VJ} = 125^{\circ}\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	10	mA
V_T	$I_T = 75; T_{VJ} = 25^{\circ}\text{C}$	$\leq$	1.3	V
V_{T0}	For power-loss calculations only		0.85	V
r_T			5.5	m Ω
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$	$\leq$	1.5	V
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq$	1.6	V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$	$\leq$	100	mA
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq$	150	mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = \frac{2}{3} V_{DRM}$	$\leq$	0.2	V
I_{GD}		$\leq$	10	mA
I_L	$T_{VJ} = 25^{\circ}\text{C}; t_P = 10 \mu\text{s}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	450	mA
I_H	$T_{VJ} = 25^{\circ}\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	200	mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	2	μs
t_q	$T_{VJ} = T_{VJM}; I_T = 11 \text{ A}, t_P = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = \frac{2}{3} V_{DRM}$	typ.	150	μs
R_{thJC}	DC current		0.45	K/W
R_{thCH}	DC current	typ.	0.2	K/W
d_s	Creeping distance on surface		8	mm
d_A	Creepage distance in air		4	mm
a	Max. allowable acceleration		50	m/s ²

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M4 screws (4x) supplied

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.23	1.489	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004
V	3.30	4.57	0.130	0.180
W	0.780	0.830	0.031	0.033

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