International
IOR Rectifier

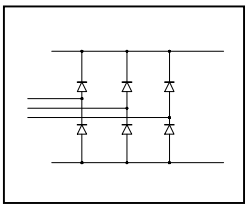
70MT160P

THREE PHASE BRIDGE **Power Module**

75A

Features

- Solderable nickel plated terminals
- UL under approval



Major Ratings and Characteristics

Parameters		70MT...P	Units
I_O		75	A
	@ T_C	80	°C
I_{FSM}	@50Hz	380	A
	@60Hz	398	
I^2t	@50Hz	724	A^2s
	@60Hz	660	
$I^2\sqrt{t}$		7240	$A^2\sqrt{s}$
V_{RRM}		1400 & 1600	V
T_{STG}	range	-40 to 125	°C
T_J	range	-40 to 150	

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code reverse voltage V	V_{RRM}, maximum repetitive peak reverse voltage V	V_{RSM}, maximum non-repetitive peak V	I_{RRM} max. @ T_J = 125°C mA
70MT140P	140	1400	1500	5
70MT160P	160	1600	1700	

Forward Conduction

	Parameter	70MT...P	Units	Conditions		
I_O	Maximum RMS output current	75	A	120° Rect conduction angle		
	@ Case temperature	80	°C			
I_{FSM}	Maximum peak, one-cycle	380	A	t = 10ms	No voltage	
	forward, non-repetitive	398		t = 8.3ms	reapplied	
	on state surge current	320		t = 10ms	100% V_{RRM}	
		335		t = 8.3ms	reapplied	Initial $T_J = T_J$ max.
I^2t	Maximum I^2t for fusing	724	A^2s	t = 10ms	No voltage	
		660		t = 8.3ms	reapplied	
		512		t = 10ms	100% V_{RRM}	
		467		t = 8.3ms	reapplied	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	7240	$A^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied		
$V_{F(TO)}$	Value of threshold voltage	0.82	V	@ T_J max.		
r_t	Slope resistance	9.5	mΩ			
V_{FM}	Maximum forward voltage drop	1.45	V	I_{pk} = 70A, T_J = 25°C t_p = 400µs single junction		

Insulation Table

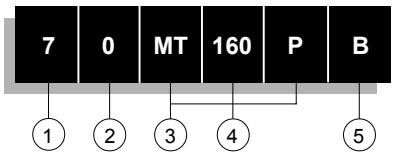
	Parameter	70MT...P	Units	Conditions
V_{INS}	RMS insulation voltage	3500	V	T_J = 25°C all terminal shorted f = 50Hz, t = 1s

Thermal and Mechanical Specifications

	Parameter	70MT...P	Units	Conditions
T_J	Maximum junction operating temperature range	- 40 to 150	°C	
T_{stg}	Maximum storage temperature range	-40 to 125	°C	
R_{thJC}	Maximum thermal resistance, junction to case	0.23	K/W	DC operation per module
		1.38		DC operation per junction
		0.29		120° Rect conduction angle per module
		1.76		120° Rect conduction angle per junction
R_{thCS}	Maximum thermal resistance, case to heatsink	0.1	K/W	Per module. Mounting surface smooth, flat and greased. Heatsink compound thermal conductivity = 0.42W/mK
T	Mounting torque ± 10% to heatsink	4	Nm	A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound. Lubricated threads.
wt	Approximate weight	65	g	

Ordering Information Table

Device Code



1 - Current rating code

2 - Circuit configuration code

3 - Essential part number

4 - Voltage code: Code x 10 = V_{RRM} (See Voltage Ratings table)

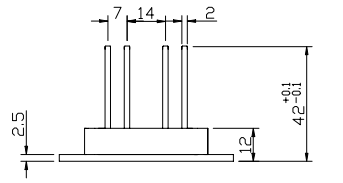
5 - Pinout code:

A = Flat pins

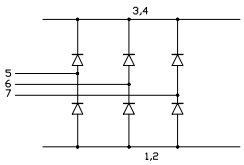
B = Round pins

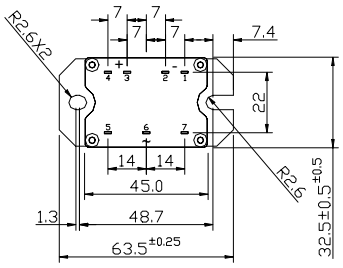
Outline Table

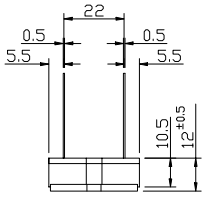
70MT...PA
(Flat pin)



Electrical circuit

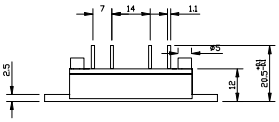


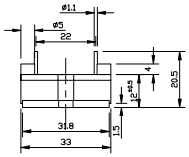


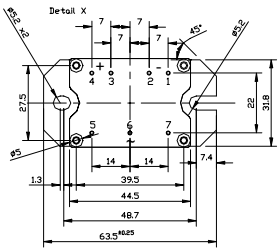


Dimensions in millimeters

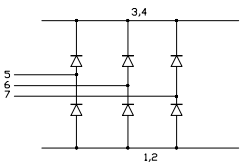
70MT...PB
(Round pin)







Electrical circuit



Dimensions in millimeters

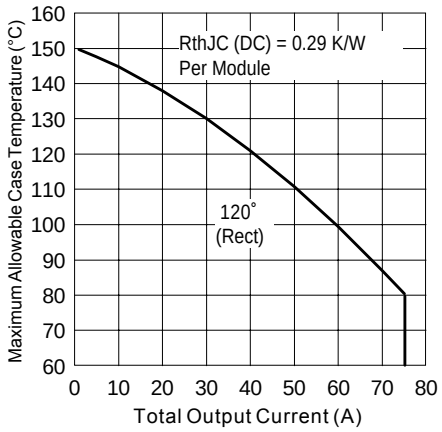


Fig. 1 - Current Rating Characteristics

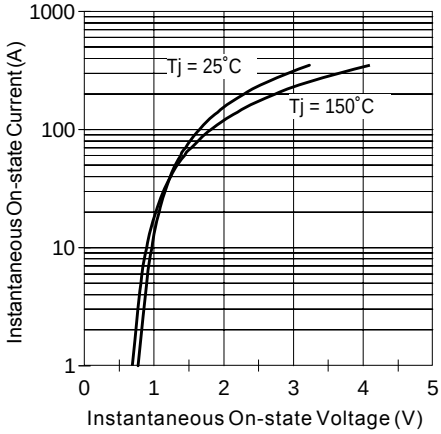


Fig. 2 - On-state Voltage Drop Characteristics

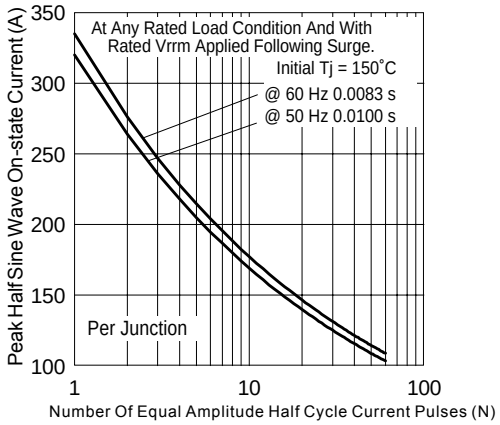


Fig. 3 - Maximum Non-Repetitive Surge Current

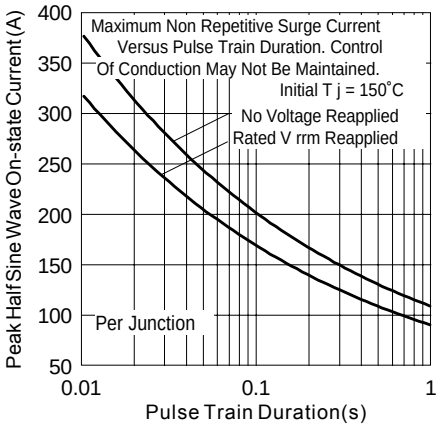


Fig. 4 - Maximum Non-Repetitive Surge Current

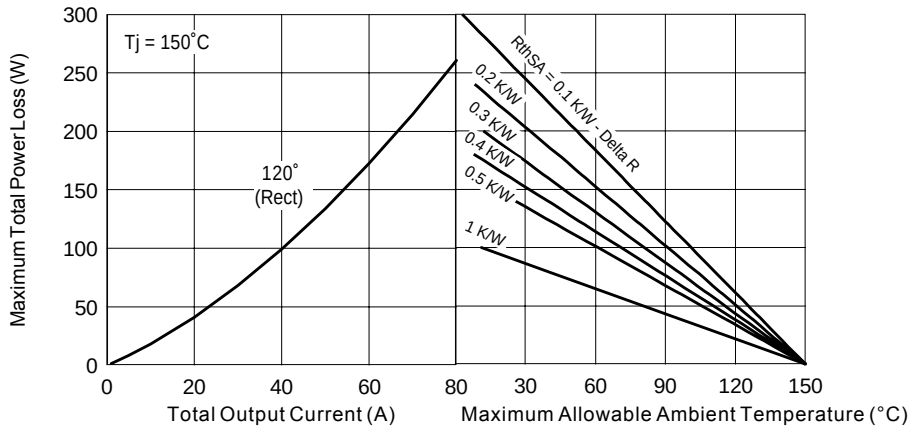


Fig. 5 - Current Rating Nomogram (1 Module Per Heatsink)

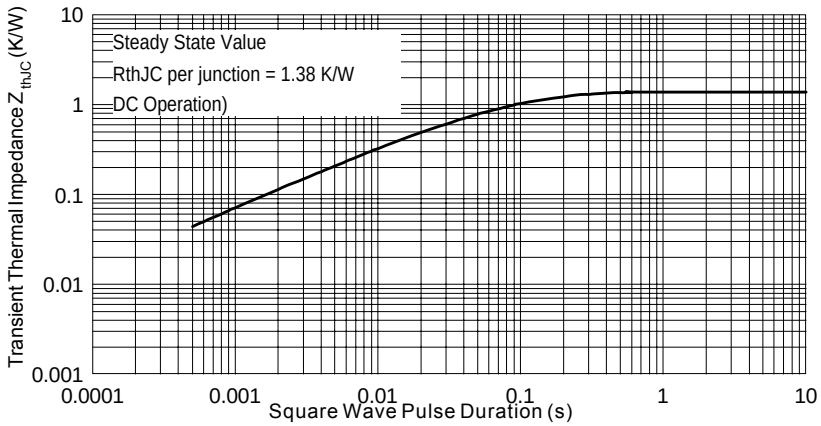


Fig. 6 - Thermal Impedance Z_{thJC} Characteristics

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