

## MRS120.18

### Diodes module

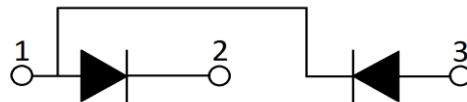
#### Features:

- International standard package
- Low forward voltage drop
- Isolation voltage 3000V ~
- Simple mounting
- UL recognized, file no. E312789



#### Typical applications:

- Various rectifier power
- AC/DC motor control
- Heater control
- Frequency converters



Symbol	Characteristics	Test Conditions	Value			Unit
			Min	Typ	Max	
$V_{RSM/DSM}$	Non-repetitive reverse/forward blocking voltage	$T_j = 25^\circ\text{C}$			1900	V
$V_{RRM/DRM}$	Repetitive reverse/forward blocking voltage	$T_j = 25^\circ\text{C}$			1800	V
$I_{F(AV)}$	Forward average current	180° half sine wave 50Hz $T_c = 100^\circ\text{C}$			120	A
$I_{F(RMS)}$	Forward square root current	180° half sine wave 50Hz $T_c = 100^\circ\text{C}$			172	A
$I_{RRM}$ $I_{DRM}$	Repetitive peak current	at $V_{DRM}/V_{RRM}$ $T_j = 150^\circ\text{C}$			5	mA
$I_{FSM}$	Forward surge current	10ms half sine wave, $T_j = 45^\circ\text{C}$			2800	A
$I^2 t$	$I^2 t$ for fusing coordination	$V_R = 0.6 V_{RRM}$ , $T_j = 45^\circ\text{C}$			39200	A <sup>2</sup> s
$V_{FO}$	Threshold voltage	$T_j = 150^\circ\text{C}$			0.83	V
$r_T$	Forward slope resistance	$T_j = 150^\circ\text{C}$			1.80	mΩ
$V_{FM}$	Peak forward voltage	$T_j = 25^\circ\text{C}$ ; $I_F = 360\text{A}$			1.60	V
$R_{th(j-c)}$	Thermal resistance junction to case	Single side cooled per chip			0.26	°C/W
$R_{th(c-s)}$	Thermal resistance case to sink	Single side cooled per chip			0.20	°C/W
$V_{ISO}$	Isolation voltage	50Hz, RMS, $t = 1\text{min}$			3000	V
$F_M$	Mounting torque - copper plate (M6)		4		6	N·m
	Mounting torque - terminal (M5)		2.5		4.5	N·m
$T_{stg}$	Storage Temperature		-40		150	°C
$T_j$	Operating Temperature		-40		150	°C
$W_t$	Weight			120		g
Outline	M01G					

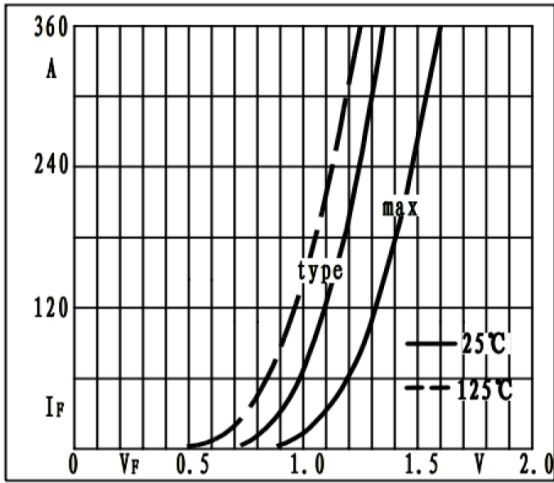


Fig1. Forward characteristics

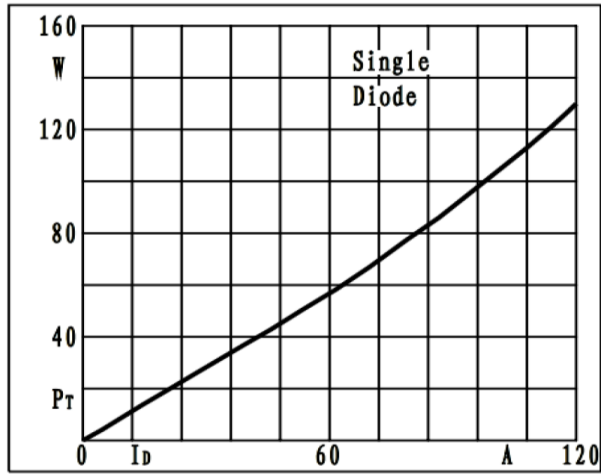


Fig2. Power dissipation

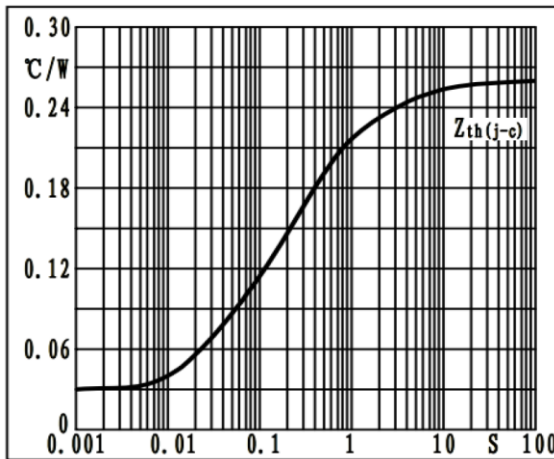


Fig3. Transient thermal impedance

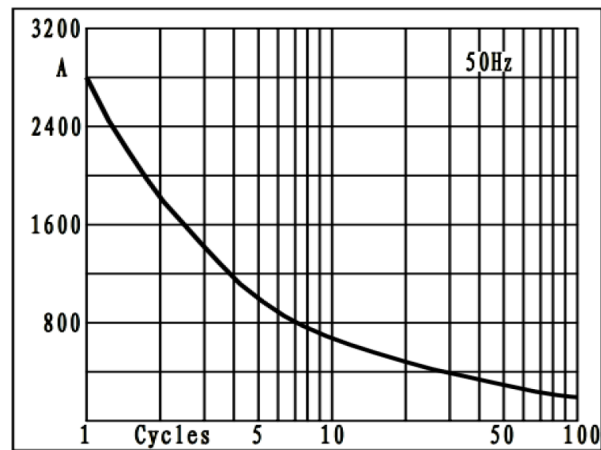


Fig4. Max non-repetitive forward surge current

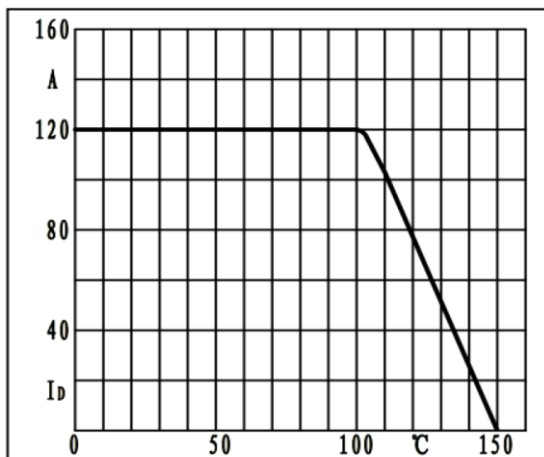
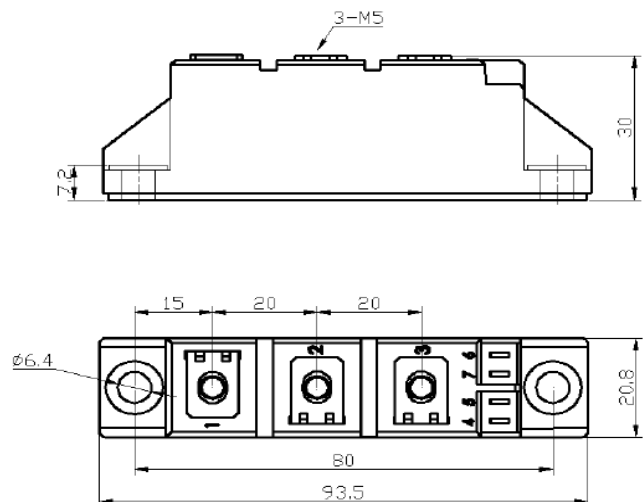


Fig5. Forward current derating curve



(dimensions in mm)

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