

TM100SZ-M

MEDIUM POWER GENERAL USE
NON-INSULATED TYPE

TM100SZ-M



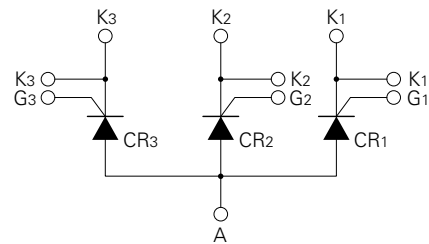
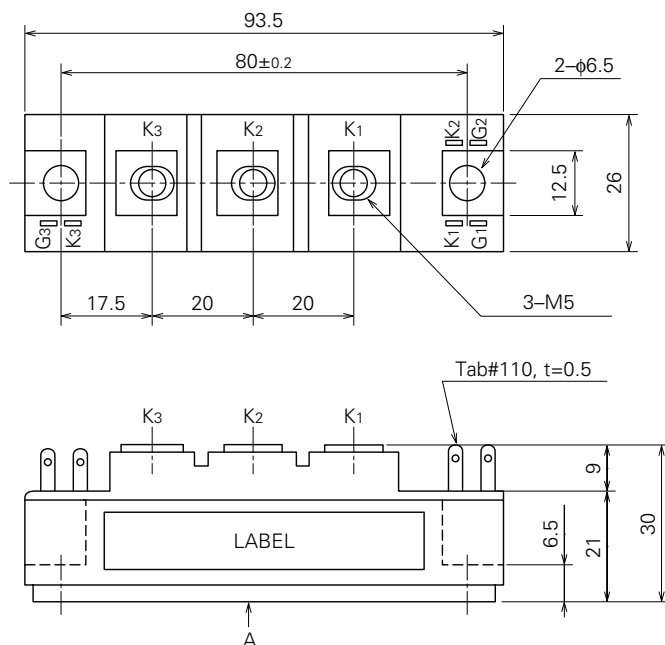
- **IT (AV)** Average on-state current **100A**
- **VRRM** Repetitive peak reverse voltage **400V**
- **VDRM** Repetitive peak off-state voltage **400V**
- **TRIPLE ARMS**
- **Non-Insulated Type**

APPLICATION

Welders

OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



TM100SZ-M**MEDIUM POWER GENERAL USE****NON-INSULATED TYPE****ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Voltage class	Unit
		M	
VRRM	Repetitive peak reverse voltage	400	V
VRSM	Non-repetitive peak reverse voltage	480	V
VR (DC)	DC reverse voltage	320	V
VDRM	Repetitive peak off-state voltage	400	V
VDSM	Non-repetitive peak off-state voltage	480	V
VD (DC)	DC off-state voltage	320	V

Symbol	Parameter	Conditions	Ratings	Unit
IT (RMS)	RMS on-state current		155	A
IT (AV)	Average on-state current	Three-phase, half-wave, $T_C=122^{\circ}\text{C}$	100	A
ITSM	Surge (non-repetitive) on-state current	One half cycle at 60Hz, peak value	2000	A
I^2t	I^2t for fusing	Value for one cycle of surge current	1.7×10^4	A^2s
di/dt	Critical rate of rise of on-state current	$V_D=1/2V_{DRM}$, $I_G=1.0\text{A}$, $T_j=150^{\circ}\text{C}$	50	$\text{A}/\mu\text{s}$
PGM	Peak gate power dissipation		5.0	W
PG (AV)	Average gate power dissipation		0.5	W
VFGM	Peak gate forward voltage		10	V
VRGM	Peak gate reverse voltage		5.0	V
IFGM	Peak gate forward current		2.0	A
T_j	Junction temperature		$-40 \sim +150$	$^{\circ}\text{C}$
T_{stg}	Storage temperature		$-40 \sim +125$	$^{\circ}\text{C}$
—	Mounting torque	Main terminal screw M5	1.47~1.96	N·m
			15~20	kg·cm
		Mounting screw M6	1.96~2.94	N·m
			20~30	kg·cm
—	Weight	Typical value	160	g

ELECTRICAL CHARACTERISTICS

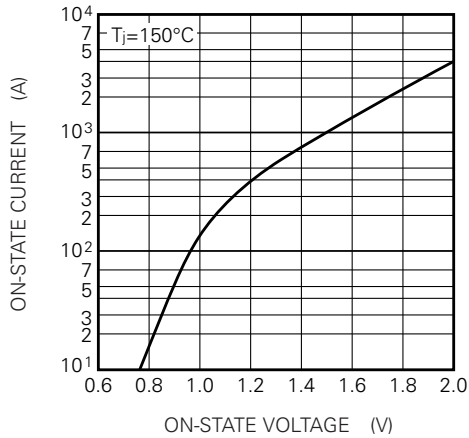
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	$T_j=150^{\circ}\text{C}$, V_{RRM} applied	—	—	30	mA
IDRM	Repetitive peak off-state current	$T_j=150^{\circ}\text{C}$, V_{DRM} applied	—	—	30	mA
VTM	On-state voltage	$T_j=150^{\circ}\text{C}$, $I_{TM}=300\text{A}$, instantaneous meas.	—	—	1.15	V
dv/dt	Critical rate of rise of off-state voltage	$T_j=150^{\circ}\text{C}$, $V_D=2/3V_{DRM}$	200	—	—	$\text{V}/\mu\text{s}$
VGT	Gate trigger voltage	$T_j=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=2\Omega$	—	—	3.0	V
VGD	Gate non-trigger voltage	$T_j=150^{\circ}\text{C}$, $V_D=1/2V_{DRM}$	0.25	—	—	V
IGT	Gate trigger current	$T_j=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=2\Omega$	15	—	100	mA
$R_{th(j-c)}$	Thermal resistance	Junction to case (per 1/3 module)	—	—	0.2	$^{\circ}\text{C}/\text{W}$
$R_{th(c-f)}$	Contact thermal resistance	Case to fin, conductive grease applied (per 1/3 module)	—	—	0.3	$^{\circ}\text{C}/\text{W}$

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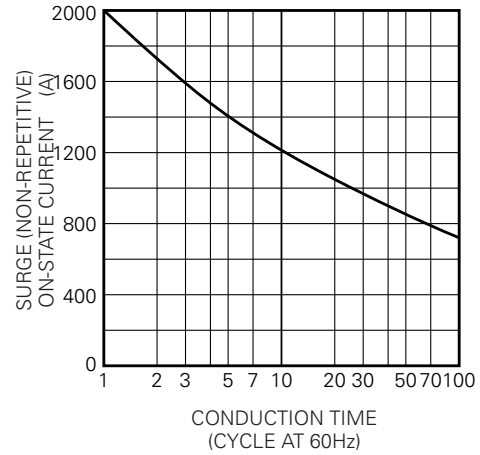
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PERFORMANCE CURVES

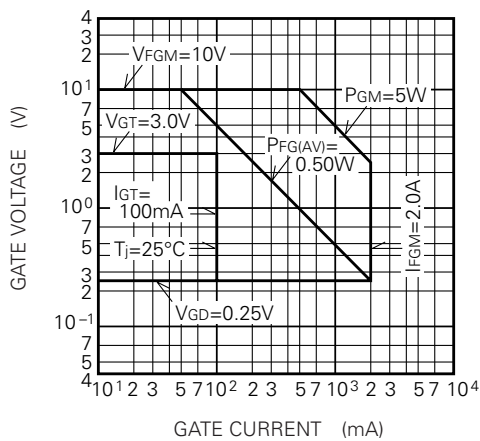
MAXIMUM ON-STATE CHARACTERISTIC



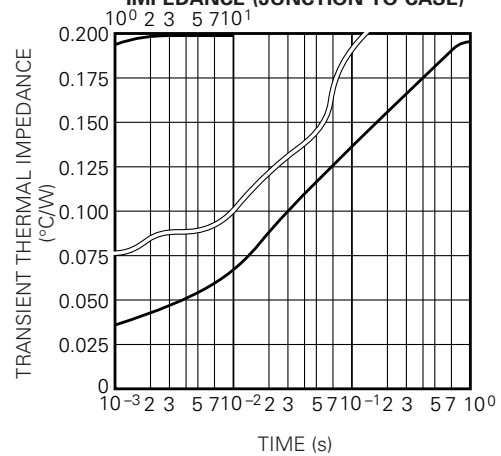
RATED SURGE (NON-REPETITIVE)
ON-STATE CURRENT



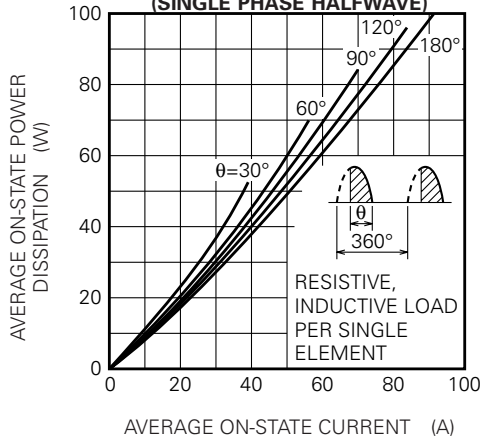
GATE CHARACTERISTICS



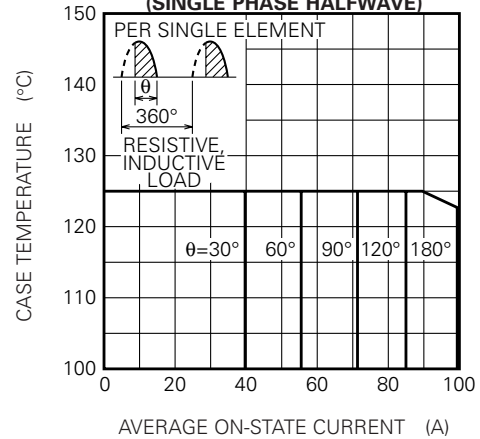
MAXIMUM TRANSIENT THERMAL
IMPEDANCE (JUNCTION TO CASE)



MAXIMUM AVERAGE ON-STATE
POWER DISSIPATION
(SINGLE PHASE HALFWAVE)



LIMITING VALUE OF THE AVERAGE
ON-STATE CURRENT
(SINGLE PHASE HALFWAVE)



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