**Features:**

- n Isolated mounting base 3000V~
- n Pressure contact technology with Increased power cycling capability
- n Space and weight saving
- n RoHS compliant

Typical Applications:

- n AC/DC Motor drives
- n Various rectifiers
- n DC supply for PWM inverter

V_{RRM}, V_{DRM}	Type & Outline	
600V	MTC820-06-416F3	MFC820-06-416F3
800V	MTC820-08-416F3	MFC820-08-416F3
1000V	MTC820-10-415F3	MFC820-10-416F3
1200V	MTC820-12-416F3	MFC820-12-416F3
1400V	MTC820-14-416F3	MFC820-14-416F3
1600V	MTC820-16-416F3	MFC820-16-416F3
1800V	MTC820-18-416F3	MFC820-18-416F3
1800V	MT820-18-416F3G	

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	$T_j(^{\circ}\text{C})$	VALUE			UNIT
				Min	Type	Max	
$I_{T(AV)}$	Mean on-state current	180° half sine wave 50Hz Single side cooled, $T_c=85^{\circ}\text{C}$	135			820	A
$I_{T(RMS)}$	RMS on-state current	180° half sine wave 50Hz				1287	A
I_{DRM} I_{RRM}	Repetitive peak current	at V_{DRM} at V_{RRM}	135			120	mA
I_{TSM}	Surge on-state current	10ms half sine wave, $V_R=0V$	135			20.1	kA
I^2t	I^2t for fusing coordination					2020	$\text{A}^2\text{s}\cdot 10^3$
V_{TO}	Threshold voltage		135			0.81	V
r_T	On-state slope resistance					0.24	m Ω
V_{TM}	Peak on-state voltage	$I_{TM}=1500A$	25			1.38	V
dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	135			1000	V/ μs
di/dt	Critical rate of rise of on-state current	Gate source 1.5A $t_r \leq 0.5\mu\text{s}$ Repetitive	135			200	A/ μs
t_{gd}	Gate controlled delay time	$I_G=1A$ $di_g/dt=1A/\mu\text{s}$	25			4	μs
t_q	Circuit commutated turn-off time	$I_{TM}=800A$, $t_p=2000\mu\text{s}$, $V_R=50V$ $dv/dt=20V/\mu\text{s}$, $di/dt=-10A/\mu\text{s}$	135		250		μs
I_{GT}	Gate trigger current	$V_A=12V$, $I_A=1A$	25	30		250	mA
V_{GT}	Gate trigger voltage			0.8		3.0	V
I_H	Holding current			10		300	mA
I_L	Latching current	$I_A=1A$ $I_G=1A$ $di_g/dt=1A/\mu\text{s}$ $t_g=30\mu\text{s}$	25			1500	mA
V_{GD}	Non-trigger gate voltage	$V_{DM}=67\%V_{DRM}$	135			0.25	V
I_{GD}	Non-trigger gate current	$V_{DM}=67\%V_{DRM}$	135			5	mA
$R_{th(j-c)}$	Thermal resistance Junction to case	Single side cooled per chip				0.047	$^{\circ}\text{C}/W$
$R_{th(c-h)}$	Thermal resistance case to heatsink	Single side cooled per chip				0.015	$^{\circ}\text{C}/W$
V_{iso}	Isolation voltage	50Hz, R.M.S, $t=1\text{min}$, $I_{iso}:1\text{mA(MAX)}$		3000			V
F_m	Terminal connection torque(M10)			10.0		12.0	N·m
	Mounting torque(M6)			4.5		6.0	N·m
T_{vj}	Junction temperature			-40		135	$^{\circ}\text{C}$
T_{stg}	Stored temperature			-40		125	$^{\circ}\text{C}$
W_t	Weight				1410		g
Outline	416F3						

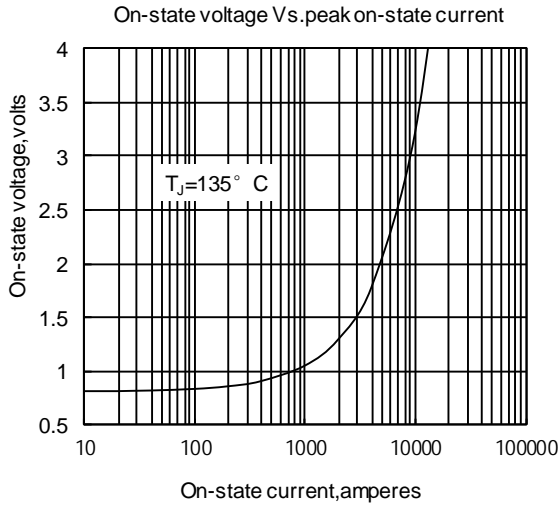


Fig 1

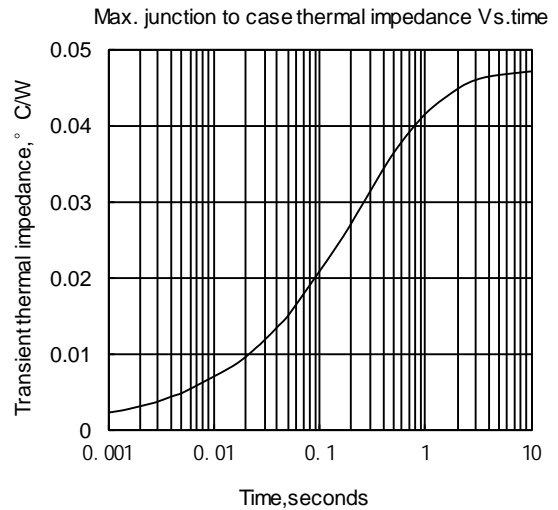


Fig 2

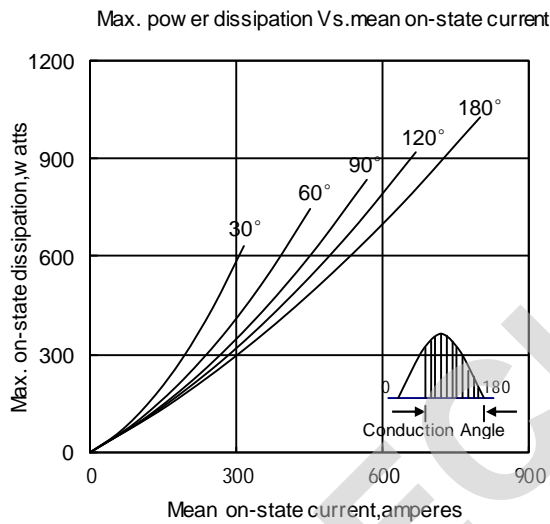


Fig 3

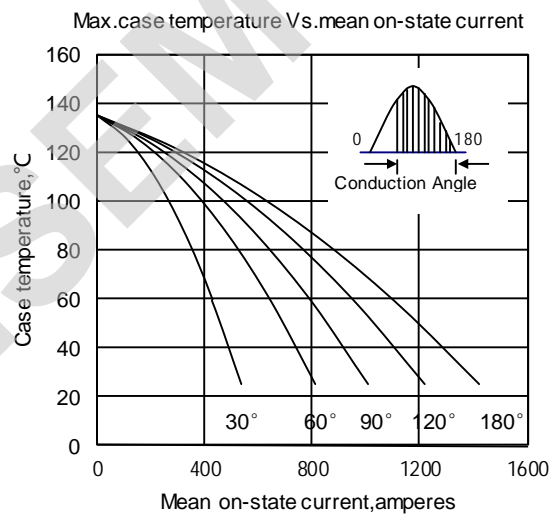


Fig 4

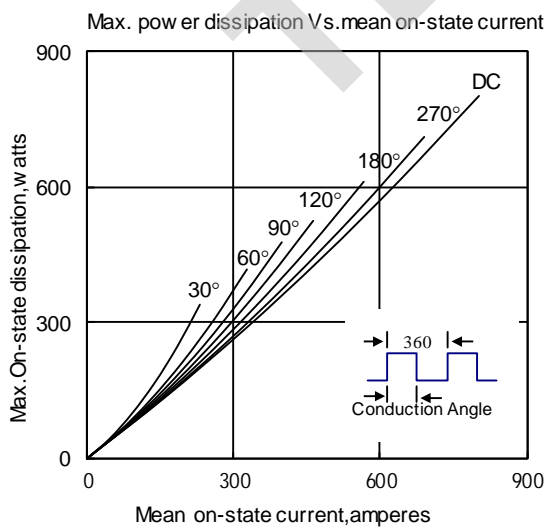


Fig 5

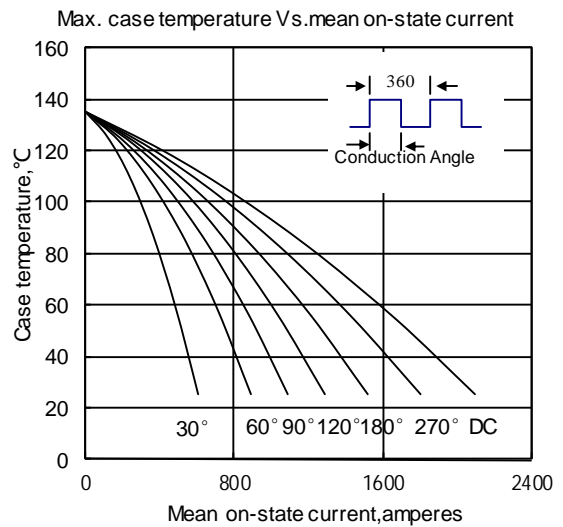


Fig 6

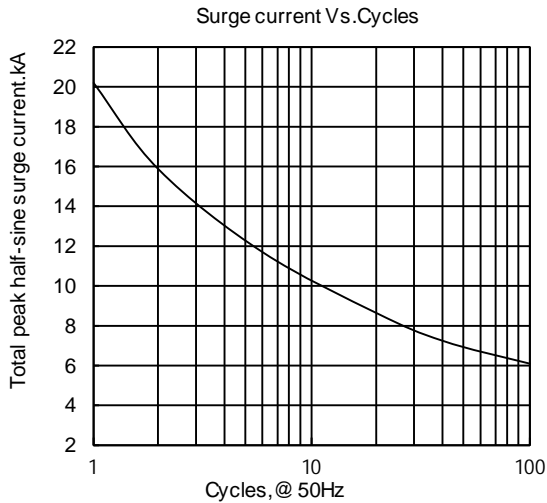


Fig 7

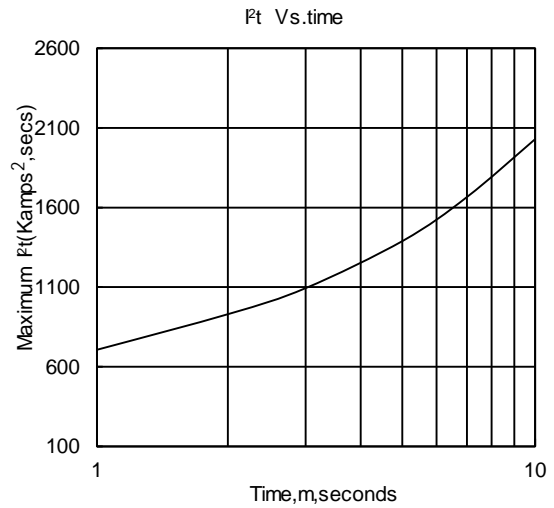


Fig 8

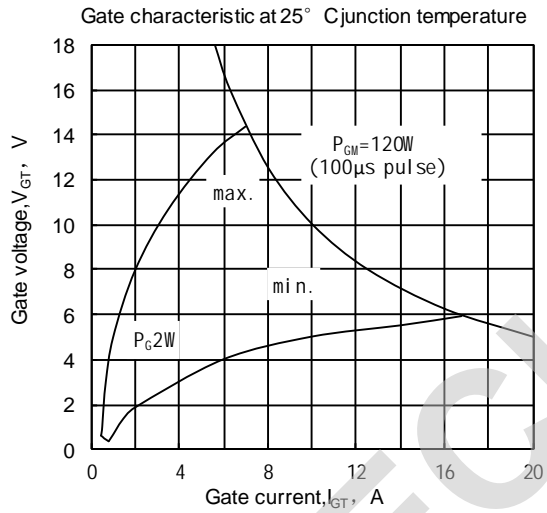


Fig 9

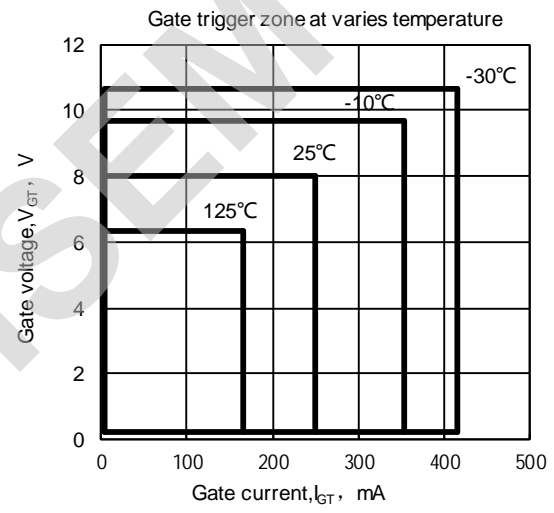
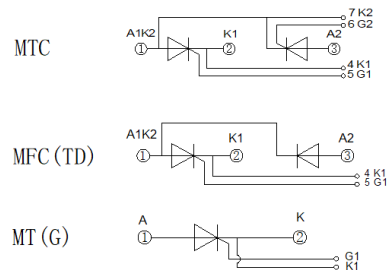
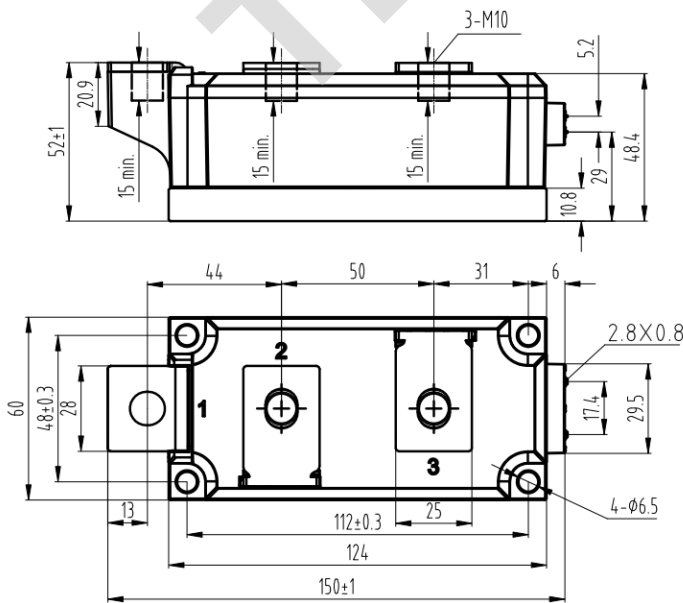


Fig 10

Outline:



Unmarked dimensional tolerance: ± 0.5mm

TECHSEM reserves the right to change specifications without notice.