

**Features:**

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

**Typical Applications:**

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

V <sub>DRM</sub> V <sub>RRM</sub>	Type & Outline	
	800V	MTx800-08-414S3
1000V	MTx800-10-414S3	MFx800-10-414S3
1200V	MTx800-12-414S3	MFx800-12-414S3
1400V	MTx800-14-414S3	MFx800-14-414S3
1600V	MTx800-16-414S3	MFx800-16-414S3
1800V	MTx800-18-414S3	MFx800-18-414S3
1800V	MT800-18-414S3G	

MTx stands for any type of **MTC, MTA, MTK**  
 MFx stands for any type of **MFC, MFA, MFK**

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	T <sub>J</sub> (°C)	VALUE			UNIT
				Min	Type	Max	
I <sub>T(AV)</sub>	Mean on-state current	180° half sine wave 50Hz Single side cooled, T <sub>c</sub> =55°C	125			800	A
I <sub>T(RMS)</sub>	RMS on-state current	180° half sine wave 50Hz				1256	A
I <sub>DRM</sub> I <sub>RDM</sub>	Repetitive peak current	at V <sub>DRM</sub> at V <sub>RRM</sub>	125			120	mA
I <sub>TSM</sub>	Surge on-state current	10ms half sine wave, V <sub>R</sub> =0V	125			16	kA
I <sup>2</sup> t	I <sup>2</sup> t for fusing coordination					1280	A <sup>2</sup> s*10 <sup>3</sup>
V <sub>TO</sub>	Threshold voltage		135			0.80	V
r <sub>T</sub>	On-state slope resistance					0.26	mΩ
V <sub>TM</sub>	Peak on-state voltage	I <sub>TM</sub> =1500A	25			1.45	V
dv/dt	Critical rate of rise of off-state voltage	V <sub>DM</sub> =67%V <sub>DRM</sub>	125			1000	V/μs
di/dt	Critical rate of rise of on-state current	Gate source 1.5A t <sub>r</sub> ≤0.5μs Repetitive	125			200	A/μs
t <sub>gd</sub>	Gate controlled delay time	I <sub>G</sub> =1A di <sub>g</sub> /dt=1A/μs	25			4	μs
t <sub>q</sub>	Circuit commutated turn-off time	I <sub>TM</sub> =800A, t <sub>p</sub> =2000μs, V <sub>R</sub> =50V dv/dt=20V/μs ,di/dt=-10A/μs	125		250		μs
I <sub>GT</sub>	Gate trigger current	V <sub>A</sub> =12V, I <sub>A</sub> =1A	25	30		250	mA
V <sub>GT</sub>	Gate trigger voltage			0.8		3.0	V
I <sub>H</sub>	Holding current			10		300	mA
I <sub>L</sub>	Latching current	I <sub>A</sub> =1A I <sub>G</sub> =1A di <sub>g</sub> /dt=1A/μs tg=30us	25			1500	mA
V <sub>GD</sub>	Non-trigger gate voltage	V <sub>DM</sub> =67%V <sub>DRM</sub>	125			0.25	V
I <sub>GD</sub>	Non-trigger gate current	V <sub>DM</sub> =67%V <sub>DRM</sub>	125			5	mA
R <sub>th(j-c)</sub>	Thermal resistance Junction to case	Single side cooled per chip				0.065	°C/W
R <sub>th(c-h)</sub>	Thermal resistance case to heatsink	Single side cooled per chip				0.020	°C/W
V <sub>iso</sub>	Isolation voltage	50Hz,R.M.S,t=1min,I <sub>iso</sub> :1mA(MAX)		3000			V
F <sub>m</sub>	Terminal connection torque(M10)			10.0		12.0	N·m
	Mounting torque(M6)			4.5		6.0	N·m
T <sub>vj</sub>	Junction temperature			-40		125	°C
T <sub>stg</sub>	Stored temperature			-40		125	°C
W <sub>t</sub>	Weight				2100		g
Outline	414S3						

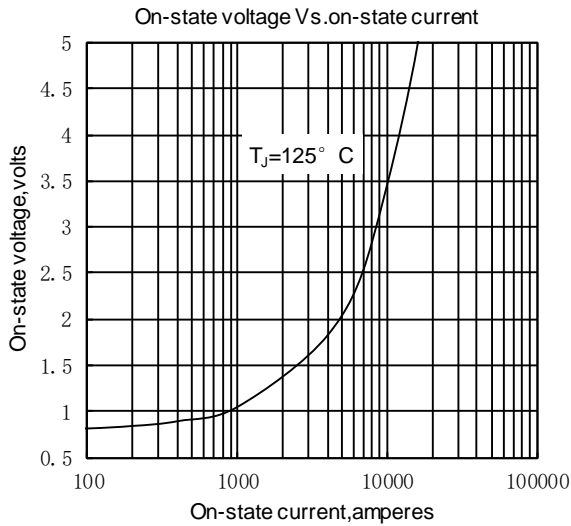


Fig.1

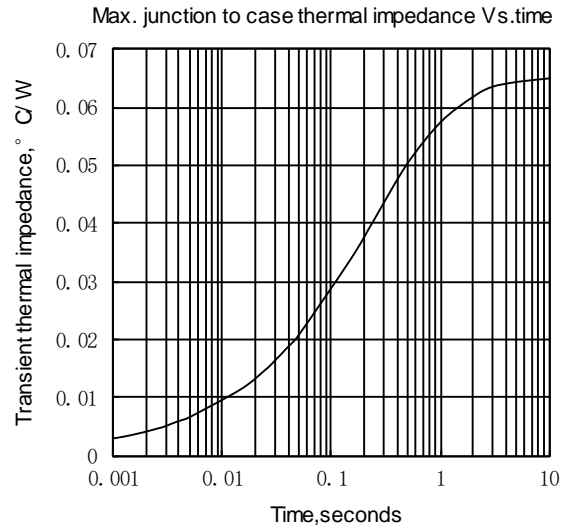


Fig.2

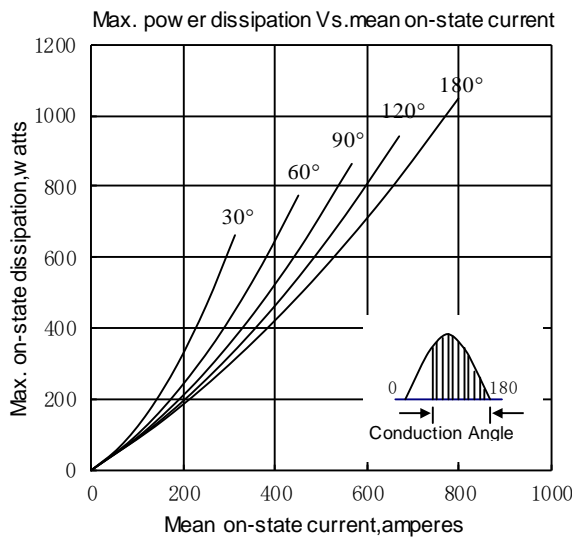


Fig.3

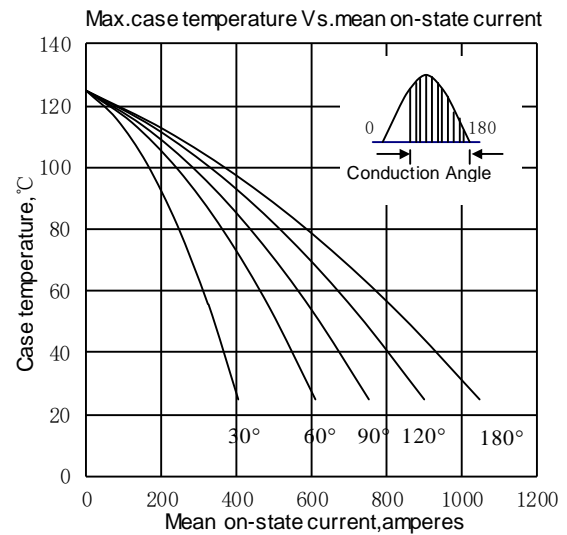


Fig.4

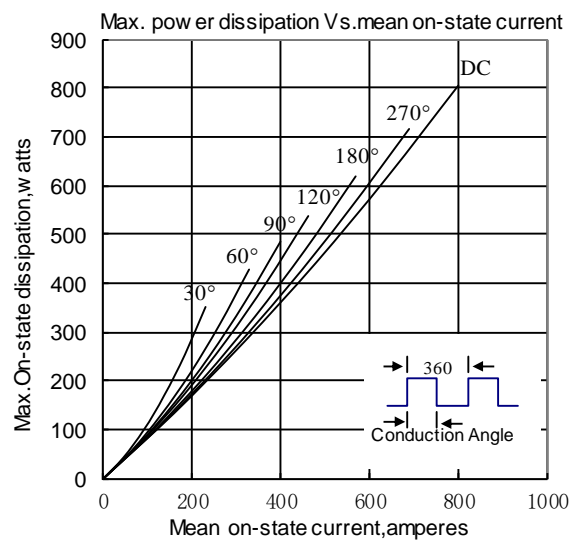


Fig.5

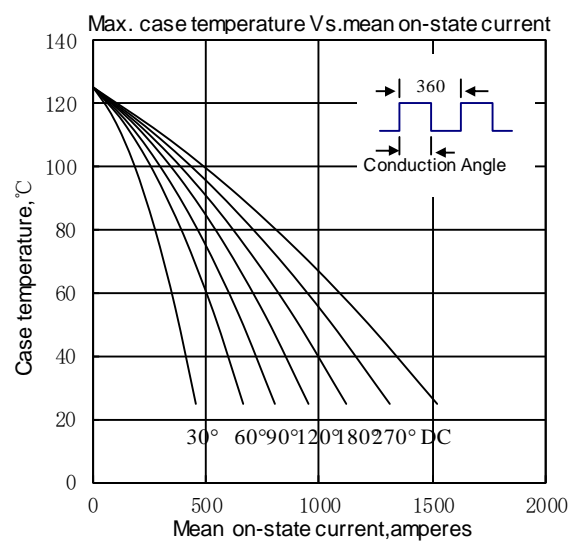


Fig.6

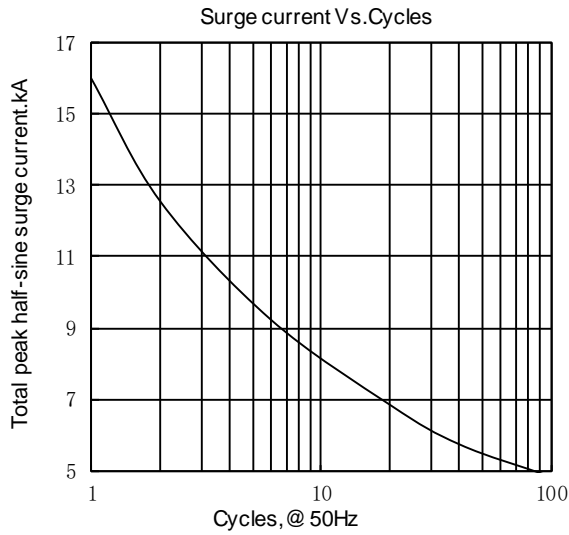


Fig.7

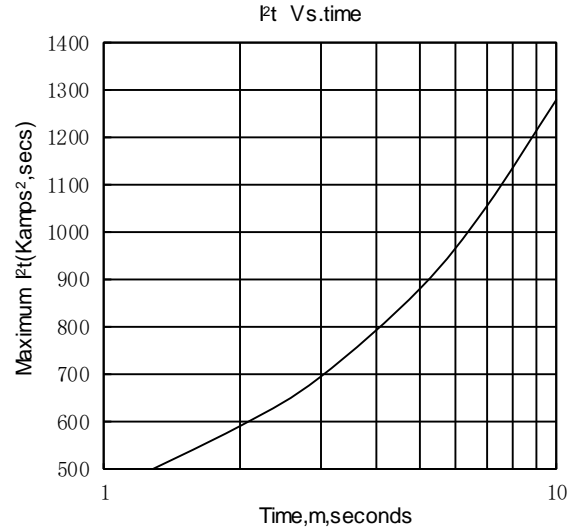


Fig.8

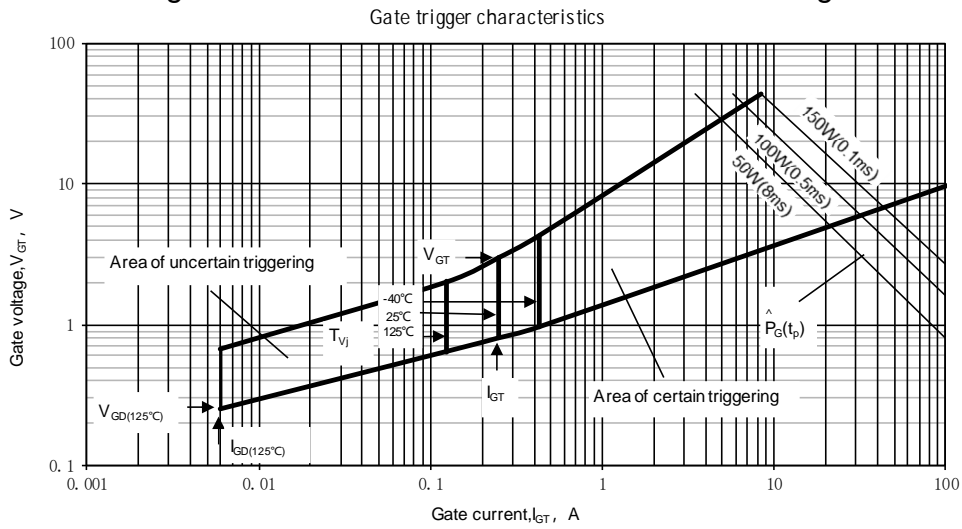
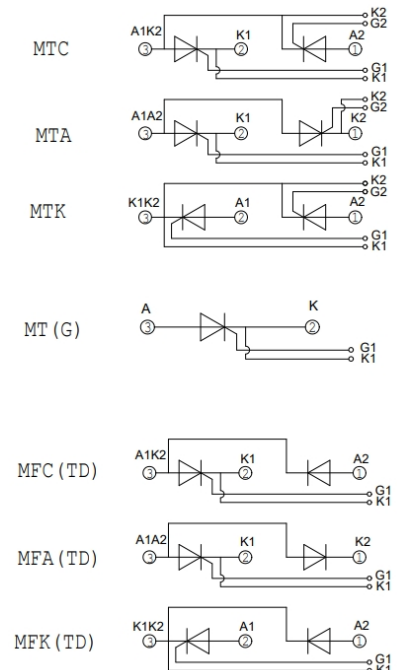
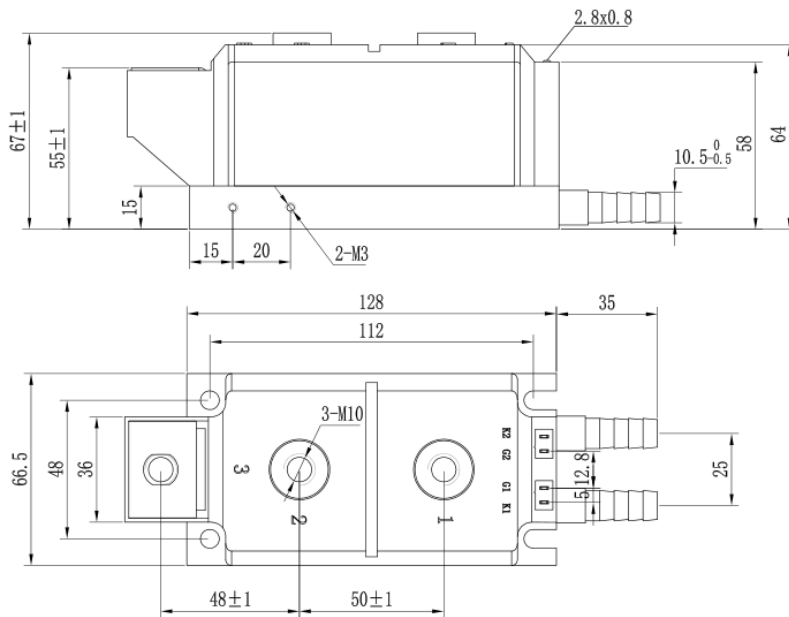


Fig.9

Outline:



Unmarked dimensional tolerance: ± 0.5mm

TECHSEM reserves the right to change specifications without notice.