

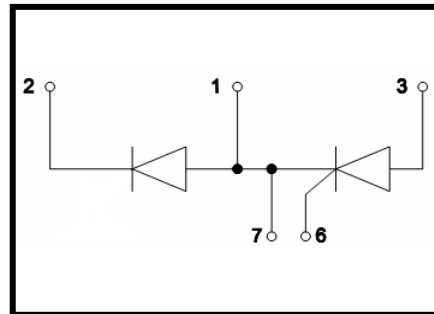
Features

- Isolation voltage 3000 V~
- Industrial Standard Package
- High Surge Capability
- Glass Passivated Chips
- Simple Mounting
- Electrically Isolated by DBC Ceramic



Applications

- DC Motor Control and Drives
- Battery Charges
- Welders
- Power Converters
- Lighting Control
- Heat and Temperature Control



Advantages

- Space and weight savings
- Improved temperature and power cycling

■ Diode

ABSOLUTE MAXIMUM RATINGS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Test Condition	Value	Unit
V_{RRM}		1600	V
$I_{d(AV)}$	$T_C=100^{\circ}\text{C}$, module	60	A
I_{FSM}	$T_J=45^{\circ}\text{C}$; $t=10\text{ms}$ (50Hz),sine	1450	A
	$V_R=0$ $t=8.3\text{ms}$ (60Hz),sine	1580	A
I^2t	$T_J=45^{\circ}\text{C}$; $t=10\text{ms}$ (50Hz),sine	10.5	KA^2s
	$V_R=0$ $t=8.3\text{ms}$ (60Hz),sine	10.4	
T_J	Junction Temperature	-40~150	$^{\circ}\text{C}$

ELECTRICAL AND THERMAL CHARACTERISTICS $T_C=25^\circ\text{C}$ unless otherwise specified

Symbol	Test Condition	Value	Unit
I_R	$V_R = V_{RRM}; T_J = 25^\circ\text{C}$	≤ 0.5	mA
	$V_R = V_{RRM}; T_J = T_{JM}$	≤ 5	mA
V_F	$I_F = 200\text{A}$	1.30	V
V_{T0}	For power-loss calculations only	0.8	V
R_{thJC}	Thermal Resistance, Junction-to-Case	0.45	K/W
R_{thCS}	Thermal Resistance, Case -to-Sink	0.10	K/W

■ Thyristor

ABSOLUTE MAXIMUM RATINGS $T_C=25^\circ\text{C}$ unless otherwise specified

Symbol	Test Condition	Value	Unit
V_{RRM} / V_{DRM}		1600	V
$I_{T(AV)}$	$T_C=85^\circ\text{C}$, 180° conduction, half sine wave;	60	A
$I_{T(RMS)}$	as AC switch;	135	A
I_{TSM}	$T_J=45^\circ\text{C}$, t=10ms (50Hz), sine, $V_R=0$;	1310	A
	$T_J=45^\circ\text{C}$, t=8.3 ms (60Hz), sine, $V_R=0$;	1370	
	$T_J=45^\circ\text{C}$, t=10ms (50Hz), sine, $V_R=V_{RRM}$;	1100	
	$T_J=45^\circ\text{C}$, t=8.3 ms (60Hz), sine, $V_R=V_{RRM}$;	1150	
i^2t	$T_J=45^\circ\text{C}$, t=10ms (50Hz), sine, $V_R=0$;	8.6	K A ² s
	$T_J=45^\circ\text{C}$, t=8.3 ms (60Hz), sine, $V_R=0$;	7.8	
	$T_J=45^\circ\text{C}$, t=10ms (50Hz), sine, $V_R=V_{RRM}$;	6.1	
	$T_J=45^\circ\text{C}$, t=8.3 ms (60Hz), sine, $V_R=V_{RRM}$;	5.5	
I_{DRM} / I_{RRM}	$V_R=V_{RRM}$, $V_D=V_{DRM}$, gate open circuit;	0.5	mA
	$T_J=125^\circ\text{C}$, $V_R=V_{RRM}$, $V_D=V_{DRM}$, gate open circuit;	15	mA
dV/dt	$T_J=125^\circ\text{C}$, exponential to 67% rated V_{DRM}	1000	V/us
V_{ISOL}	50Hz, all terminals shorted, t=1min, $I_{ISOL} \leq 1\text{mA}$;	3000	V~
T_J	Max. junction operating temperature range	-40~125	°C
T_{STG}	Max. storage temperature range	-40~125	°C

ELECTRICAL CHARACTERISTICST_C=25°C unless otherwise specified

Symbol	Test Condition	Min.	Typ.	Max.	Unit
V _{TO}	16.7% x π x I _{AV} < I < π x I _{AV} , T _J =125°C;			0.85	V
	I > π x I _{AV} , T _J =125°C;			0.88	V
r _t	16.7% x π x I _{AV} < I < π x I _{AV} , T _J =125°C;			3.53	mΩ
	I > π x I _{AV} , T _J =125°C;			3.41	mΩ
I _H	V _{AK} = 6V, resistive load;			200	mA
I _L	Anode supply =6V, resistive load=1Ω, gate pulse =10V, 100us;			400	mA
V _{TM}	I _{TM} =200A, t _d =10 ms, half sine		1.30	1.80	V
P _{GM}	t _p ≤5ms, T _J =125°C;			10	W
P _{GM(AV)}	f=50Hz, T _J =125°C;			2.5	W
I _{GM}	t _p ≤5ms, T _J =125°C;			2.5	A
-V _{GT}				10	V
V _{GT}	V _A =6V, R _A =1Ω, T _J =-40°C;			4	V
	V _A =6V, R _A =1Ω;			2.5	
	V _A =6V, R _A =1Ω, T _J =125°C;			1.7	
I _{GT}	V _A =6V, R _A =1Ω, T _J =-40°C;			270	mA
	V _A =6V, R _A =1Ω;			150	
	V _A =6V, R _A =1Ω, T _J =125°C;			80	
V _{GD}	V _{AK} =V _{DRM} , T _J =125°C			0.25	V
I _{GD}				6	mA
di/dt	T _J = 25°C, V _D =0.67V _{DRM} , I _{TM} =345A, I _g = 500mA, tr < 0.5 μs, tp > 6 μs			150	A/us

THERMAL AND MECHANICAL CHARACTERISTICST_C=25°C unless otherwise specified

Symbol	Test Condition	value	Unit
R _{thjc}	Thermal Resistance , Junction-to-Case	0.45	K/W
R _{THCS}	Thermal Resistance, Case -to-Sink	0.10	K/W
Md	Mounting torque(M5)	3 to 5	N·m
	Terminal connection torque(M5)		
Weight	Typical value	105	g

Characteristic curves

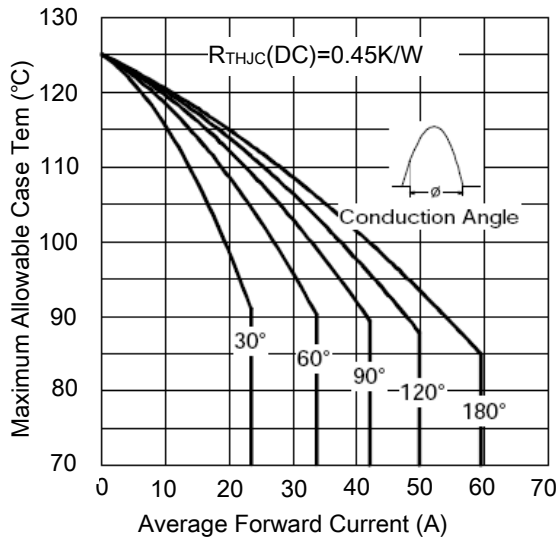


Figure 1. Current Rating Characteristics

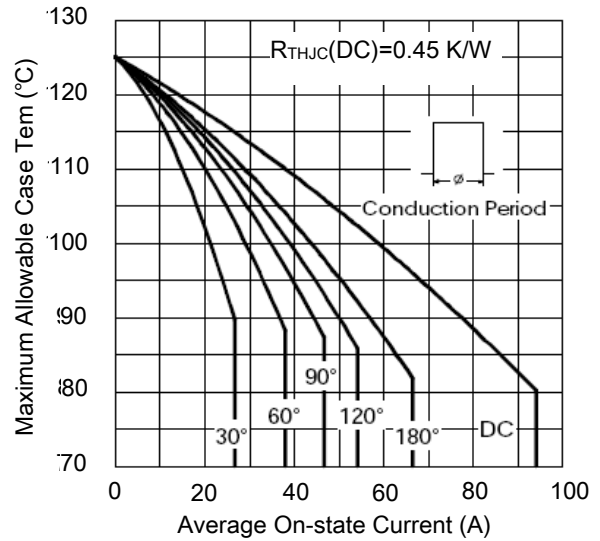


Figure 2. Current Rating Characteristics

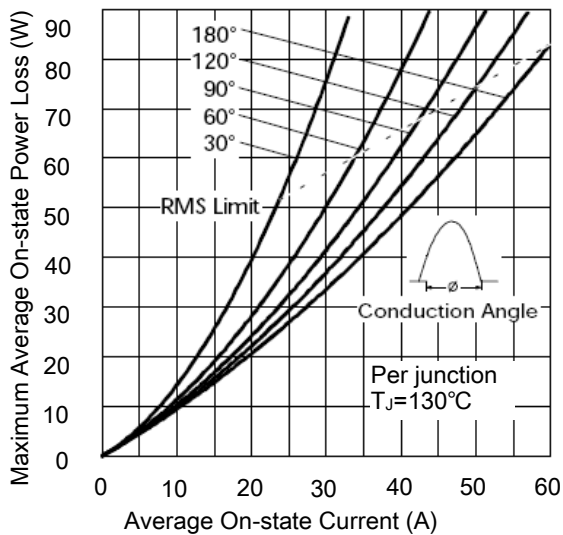


Figure 3. On-state Power Loss Characteristics

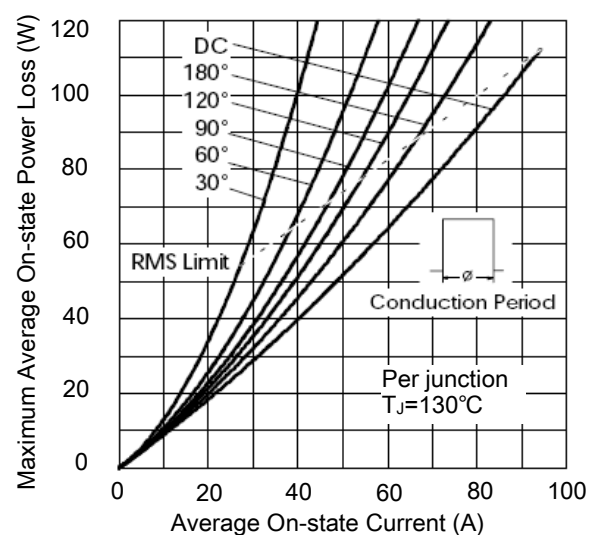


Figure 4. On-state Power Loss Characteristics

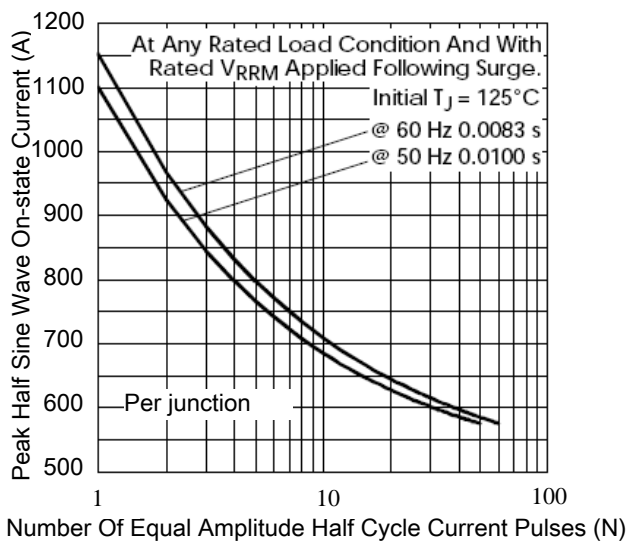


Figure 5. Maximum Non-Repetitive Surge Current

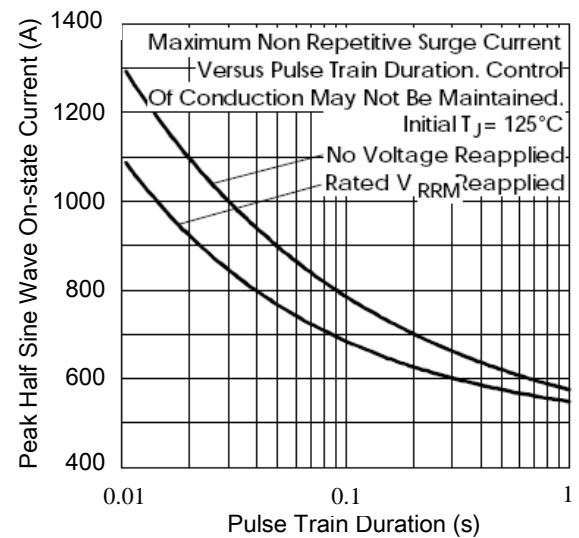


Figure 6. Maximum Non-Repetitive Surge Current

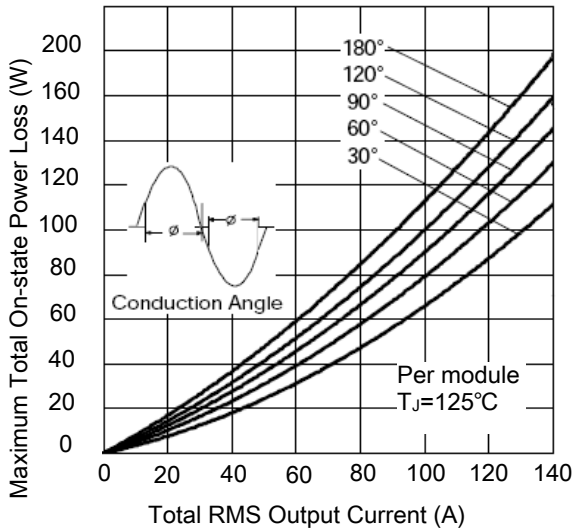


Figure 7. On-State Power Loss Characteristics-1

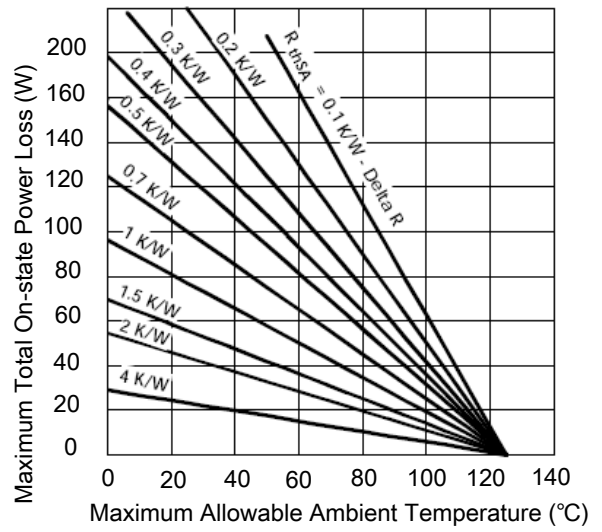


Figure 8. On-State Power Loss Characteristics-2

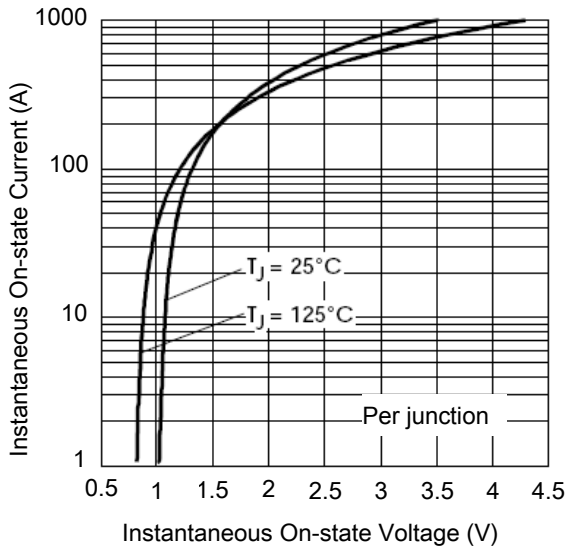


Figure 9. On-state Voltage Drop Characteristics

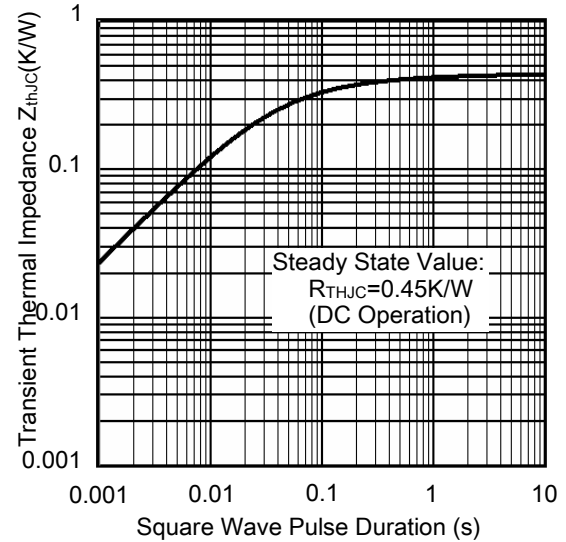


Figure 10. Thermal Impedance Z_{thJC} Characteristics

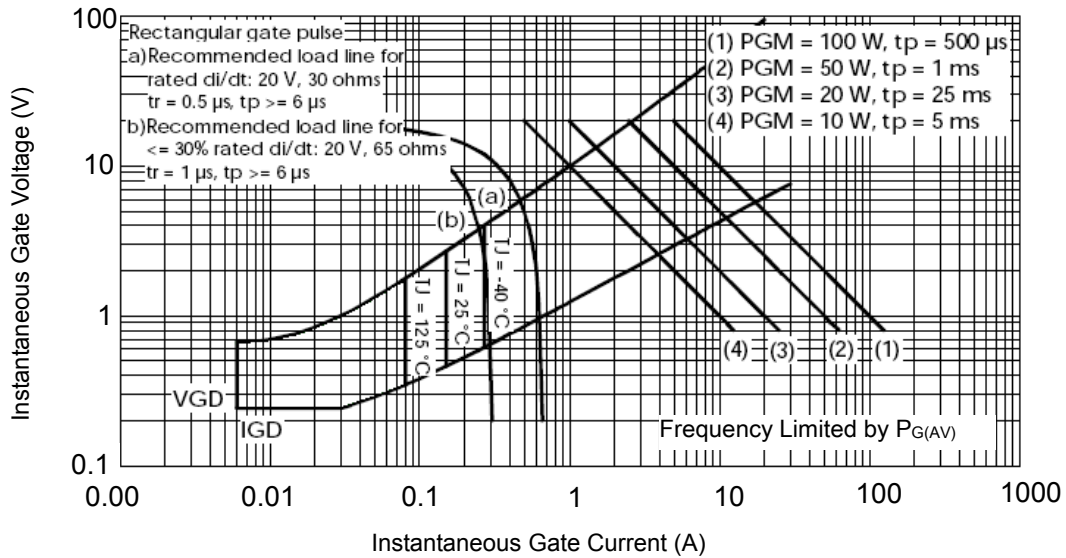


Figure.11 Gate Characteristics

Package Outline (Dimensions in mm)

