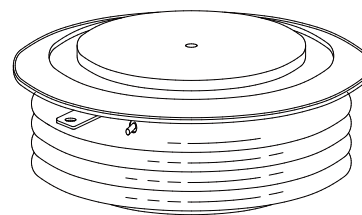


Features:

- All Diffused Structure
- Amplifying Gate Configuration
- Blocking capability up to 1800 volts
- High dv/dt Capability
- Pressure Assembled Device



T15C

Notes:

- (1) All voltage ratings are specified for an applied 50Hz sinusoidal waveform over the temperature range -40 to +125 °C.
- (2) 10 msec. max. pulse width
- (3) Maximum value for $T_j = 125^\circ\text{C}$.
- (4) Minimum value for linear and exponential waveshape to 67% rated V_{DRM} . Gate open. $T_j = 125^\circ\text{C}$.
- (5) The value of di/dt is established in accordance with EIA/NIMA Standard JB/T8950.2-2013.

Electrical Characteristics And Ratings

Blocking - Off State

Device Type	V_{RRM} (1)	V_{DRM} (1)	V_{RSM} (1)
KP3850/12	1200	1200	1400
KP3850/14	1400	1400	1600
KP3850/16	1600	1600	1760
KP3850/18	1800	1800	1900

V_{RRM} = Repetitive peak reverse voltage

V_{DRM} = Repetitive peak off state voltage

V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage and off state leakage	$I_{\text{RRM}} / I_{\text{DRM}}$	5mA/200mA (3)
Critical rate of voltage rise	dv/dt (4)	1000V/ μs

Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	$I_{\text{T(AV)}}$		3850		A	Sinewave, 180° conduction, $T_c = 70^\circ\text{C}$
RMS value of on-state current	I_{TRMS}		6045		A	Nominal value
Peak one cycle surge (non repetitive) current	I_{TSM}		65000		A	10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, $T_j = 125^\circ\text{C}$
I square t	I^2t		2.11×10^7		A^2s	10 msec
Latching current	I_{L}		1000		mA	$V_D = 12\text{ V}$; $R_L = 12\text{ ohms}$
Holding current	I_{H}		200		mA	$V_D = 12\text{ V}$; $I = 2.5\text{ A}$

Peak on-state voltage	V_{TM}		1.35		V	$I_{TM}=3000A; T_j=25^{\circ}C$
Threshold voltage, low-level	V_{TO}		0.86		V	$T_j=125^{\circ}C$
Slope resistance, low-level	r_T		0.095		mΩ	1000A to 5000A
Critical rate of rise of on-state current(5)	di/dt		200		A/μs	$T_j=125^{\circ}C; V_D = 0.67 V_{DRM};$ $f=50Hz; I_{TM}=5000A$

Electrical Characteristics And Ratings

Gating

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	P_{GM}		20		W	
Average gate power dissipation	$P_{G(AV)}$		4		W	
Gate-trigger current	I_{GT}		250		mA	$V_D=12V; R_L=3\text{ ohms}; T_j=+25^{\circ}C$
Gate-trigger voltage	V_{GT}	0.7	3		V	$V_D=12V; R_L=3\text{ ohms}; T_j=+25^{\circ}C$
Peak negative voltage	V_{GRM}		5		V	

Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	t_d		3	2.5	μs	$I_{TM}=100A; V_D=67\%V_{DRM}$ Gate pulse: $V_G=30V;$ $R_G=10\text{ohms}; t_r=0.1\mu s; t_p=20\mu s$
Turn-off time (with $V_R = -5V$)	t_q			300	μs	$I_{TM}=2000A; di/dt=-10A/\mu s;$ $V_R=100V; dv/dt=30V/\mu s;$ $V_D=67\%V_{DRM}; T_j=125^{\circ}C$
Reverse recovery charge	Q_{rr}				μC	$I_{TM}=2000A; di/dt=-10A/\mu s;$ $V_R=100V; T_j=125^{\circ}C$

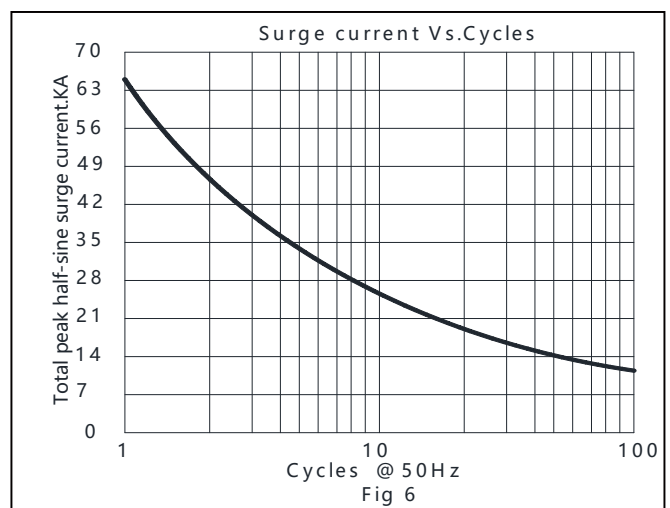
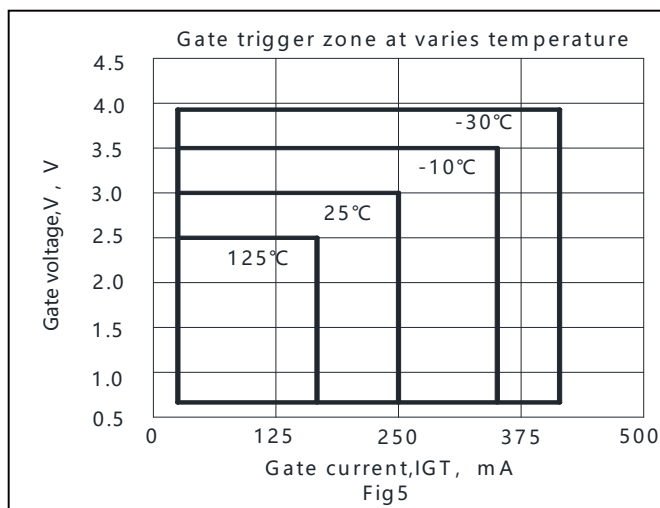
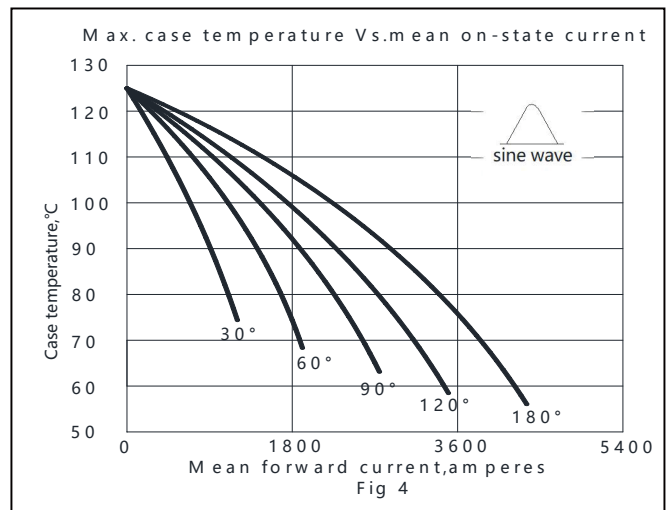
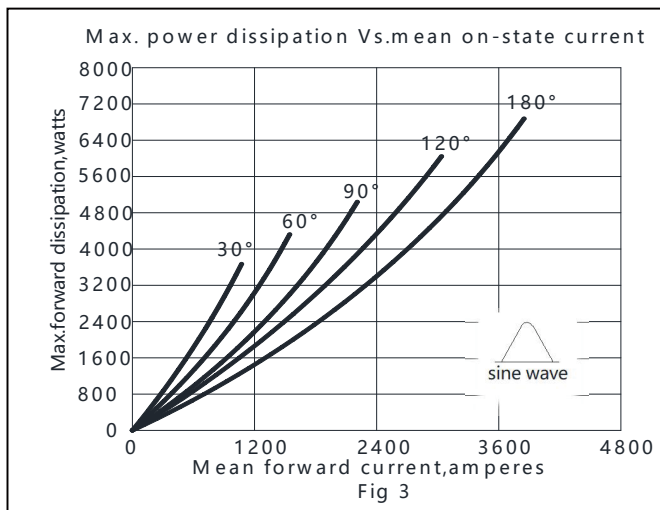
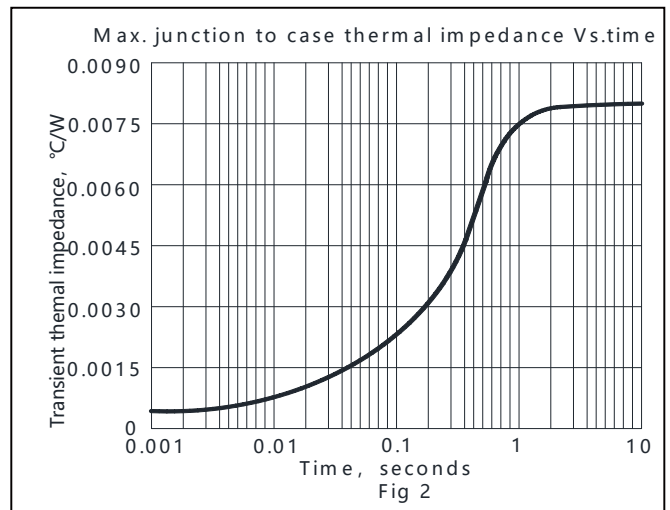
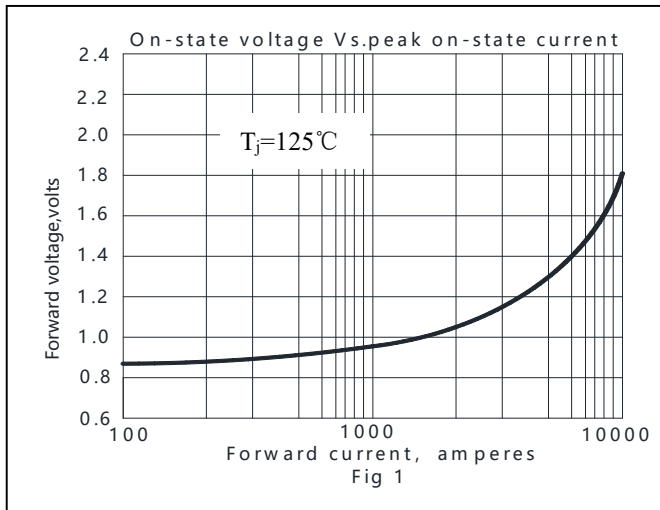
Thermal And Mechanical Characteristics And Ratings

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	125		°C	
Storage temperature	T_{stg}	-40	140		°C	
Thermal resistance - junction to case	$R_{\theta(j-c)}$		0.008		°C/W	Double sided cooled
Thermal resistance - case to heatsink	$R_{\theta(c-s)}$		0.002		°C/W	Double sided cooled
Mounting force	F	57	63	60	kN	
Weight	m			1.4	kg	

* Mounting surfaces smooth, flat and greased

Graph

03



Case Outline And Dimensions

04

