

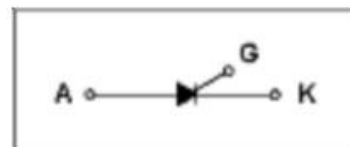
主要用途

单向可控硅, 用于过压保护、马达控制、限流电路、加热控制等。

极限值 ($T_j=25^{\circ}\text{C}$)

T_{stg} —— 贮存温度	$-40\sim 150^{\circ}\text{C}$
T_j —— 结温	125°C
V_{DRM} —— 重复峰值断态电压	500V
$I_T(\text{RMS})$ —— RMS通态电流 (均方值)	12A
$I_{T(\text{AV})}$ —— 平均通态电流 (半正弦波, $T_c=109^{\circ}\text{C}$)	7.5A
I_{TSM} —— 浪涌通态电流 (1/2周期, 50Hz, 正弦波, 不重复)	100A
V_{RGM} —— 反向峰值门极电压	5V
I_{FGM} —— 正向峰值门极电流	2.0A
P_{GM} —— 峰值门极功耗	5.0W

外形图及引脚排列



TO-252



TO-220



电参数 ($T_c=25^{\circ}\text{C}$)

参数符号	符 号 说 明	最小值	典型值	最大值	单 位	测 试 条 件
I_{DRM}	重复峰值断态电流	--	--	20 500	μA μA	$V_{\text{AK}}=V_{\text{DRM}}$ $T_c=25^{\circ}\text{C}$ $T_c=125^{\circ}\text{C}$
V_{TM}	峰值通态电压(1)	--	--	1.75	V	$I_{\text{TM}}=23\text{A}$, $t_p=380\mu\text{s}$
I_{GT}	门极触发电流(2)	--	--	15	mA	$V_{\text{AK}}=12\text{V}(\text{DC})$, $R_L=10\text{ ohm}$ $T_c=25^{\circ}\text{C}$
V_{GT}	门极触发电压(2)	--	--	1.5	V	$V_{\text{AK}}=12\text{V}(\text{DC})$, $R_L=10\text{ ohm}$ $T_c=25^{\circ}\text{C}$
V_{GD}	门极不触发电压(1)	0.2	--	--	V	$V_{\text{AK}}=12\text{V}$, $R_L=100\text{ ohm}$ $T_c=125^{\circ}\text{C}$
I_{H}	维持电流	--	--	20	mA	$I_T=100\text{mA}$, 栅极开路 $T_c=25^{\circ}\text{C}$
$(dv/dt)_c$	最低电压上升率	50	--	--	V/ μs	线性倾斜上升至 $V_D=V_{\text{DRM}} 67\%$, 栅极开路, $T_j=125^{\circ}\text{C}$
$R_{\text{th}(j-c)}$	热阻	--	--	1.3	$^{\circ}\text{C}/\text{W}$	结到外壳
$R_{\text{th}(j-a)}$	热阻	--	60	--	$^{\circ}\text{C}/\text{W}$	结到环境

特性曲线

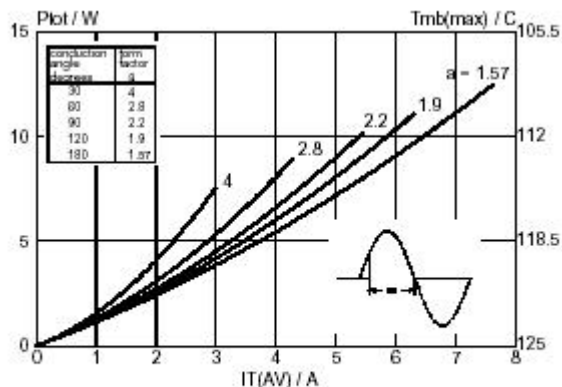


Fig. 1. Maximum on-state dissipation, P_{tot} , versus average on-state current, $I_{T(AV)}$, where $a = \text{form factor} = I_{T(RMS)} / I_{T(AV)}$.

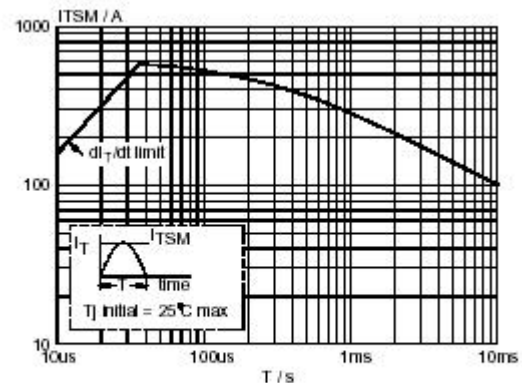


Fig. 2. Maximum permissible non-repetitive peak on-state current I_{TSM} versus pulse width t_p for sinusoidal currents, $t_p \leq 10\text{ms}$.

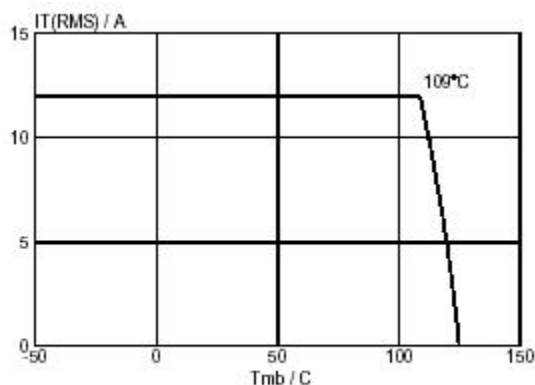


Fig. 3. Maximum permissible rms current $I_{T(RMS)}$ versus mounting base temperature T_{mb} .

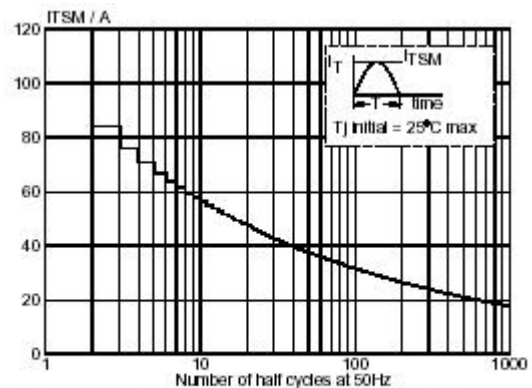


Fig. 4. Maximum permissible non-repetitive peak on-state current I_{TSM} versus number of cycles, for sinusoidal currents, $f = 50\text{Hz}$.

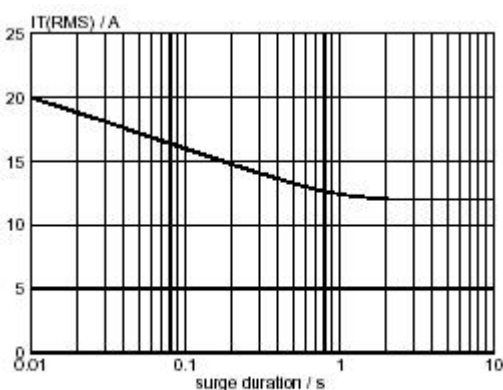


Fig. 5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$ versus surge duration, for sinusoidal currents, $f = 50\text{Hz}$; $T_{mb} \leq 109°C$.

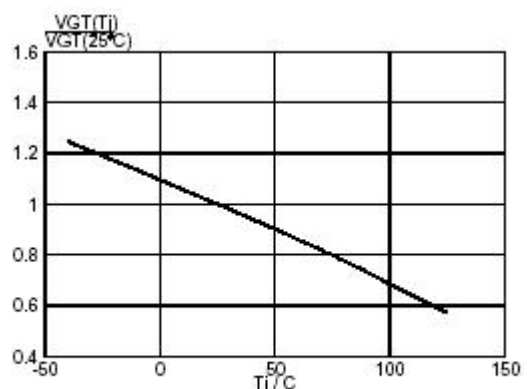


Fig. 6. Normalised gate trigger voltage $V_{GT}(T_j) / V_{GT}(25°C)$, versus junction temperature T_j .

特性曲线

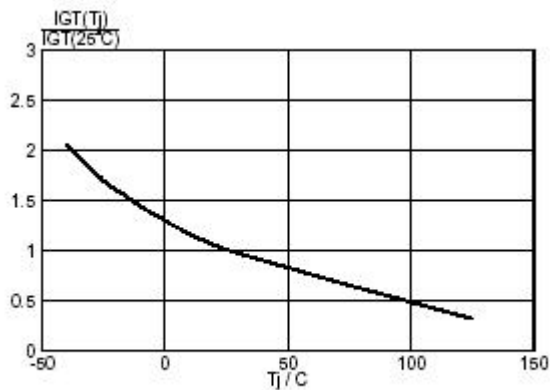


Fig. 7. Normalised gate trigger current $I_{GT}(T_J) / I_{GT}(25^\circ\text{C})$, versus junction temperature T_J .

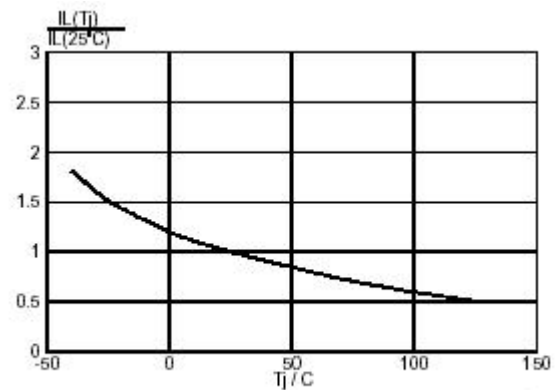


Fig. 8. Normalised latching current $I_L(T_J) / I_L(25^\circ\text{C})$, versus junction temperature T_J .

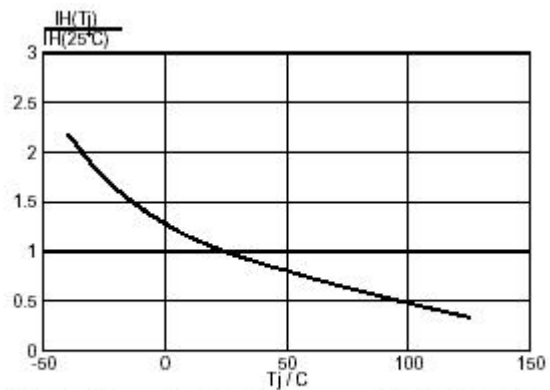


Fig. 9. Normalised holding current $I_H(T_J) / I_H(25^\circ\text{C})$, versus junction temperature T_J .

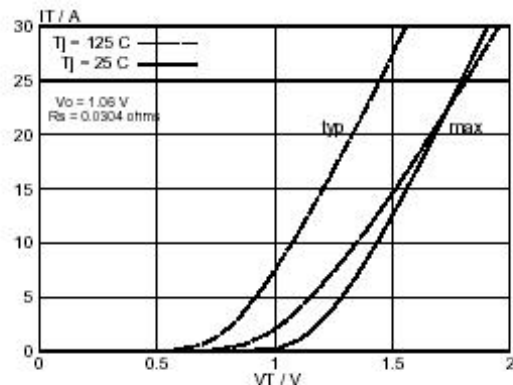


Fig. 10. Typical and maximum on-state characteristic.

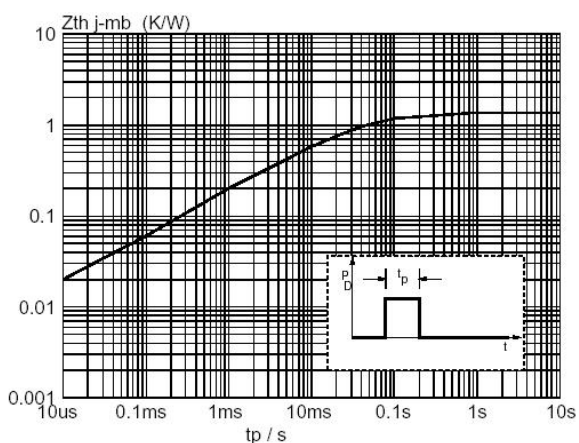


Fig. 11. Transient thermal impedance Z_{thj-mb} , versus pulse width t_p .

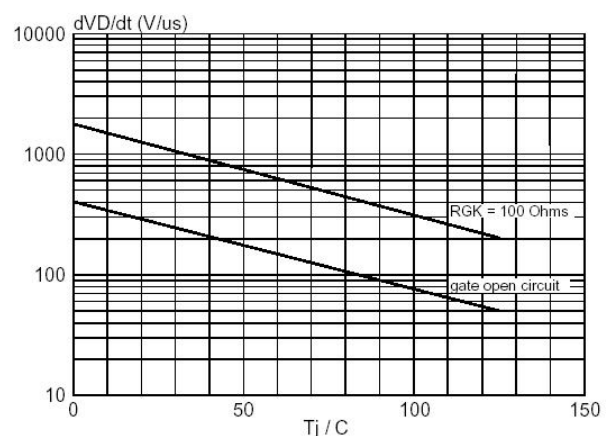
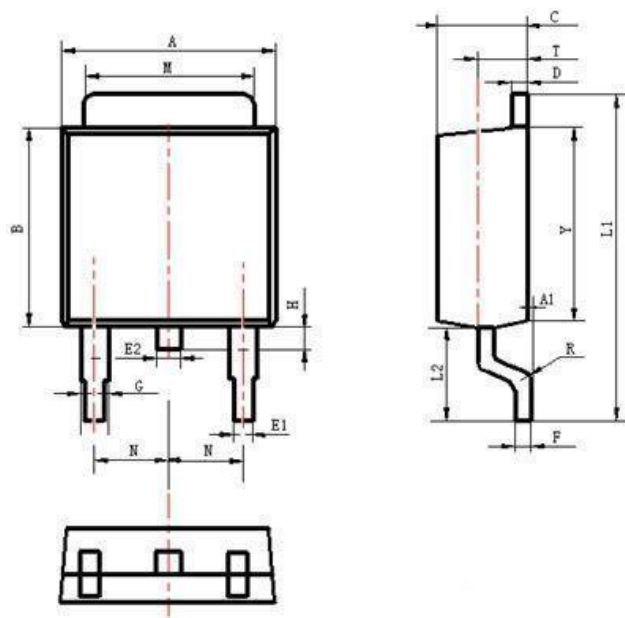


Fig. 12. Typical, critical rate of rise of off-state voltage, dV_D/dt versus junction temperature T_J .

注:

- 1、脉冲宽度等于1.0ms, 占空因数小于等于1%
- 2、测量时不包括RGK电流

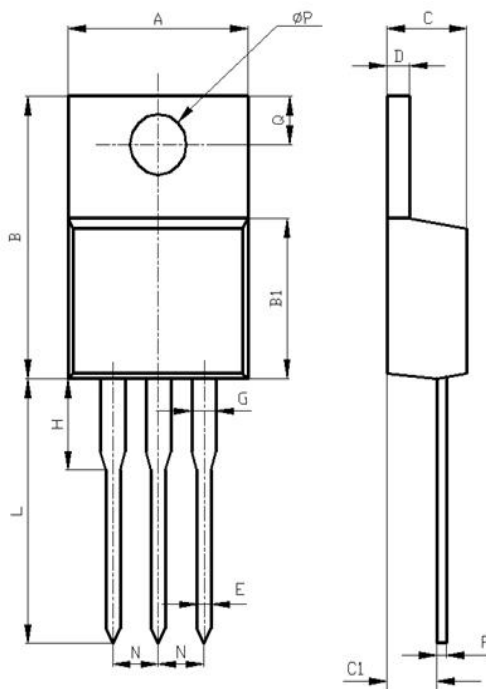
Package Description



Items	Values(mm)	
	MIN	MAX
A	6.30	6.90
A1	0	0.13
B	5.70	6.30
C	2.10	2.50
D	0.30	0.60
E1	0.60	0.90
E2	0.70	1.00
F	0.30	0.60
G	0.70	1.20
L1	9.60	10.50
L2	2.70	3.10
H	0.60	1.00
M	5.10	5.50
N	2.09	2.49
R	0.3	
T	1.40	1.60
Y	5.10	6.30

TO-252 Package

Package Description



Items	Values(mm)	
	MIN	MAX
A	9.60	10.6
B	15.0	16.0
B1	8.90	9.50
C	4.30	4.80
C1	2.30	3.10
D	1.20	1.40
E	0.70	0.90
F	0.30	0.60
G	1.17	1.37
H	2.70	3.80
L	12.6	14.8
N	2.34	2.74
Q	2.40	3.00
Ø P	3.50	3.90

TO-220 Package

NOTE:

1. Exceeding the maximum ratings of the device in performance may cause damage to the device, even the permanent failure, which may affect the dependability of the machine. Please do not exceed the absolute maximum ratings of the device when circuit designing.
2. When installing the heat sink, please pay attention to the torsional moment and the smoothness of the heat sink.
3. MOSFETs is the device which is sensitive to the static electricity, it is necessary to protect the device from being damaged by the static electricity when using it.
4. Shenzhen Minos reserves the right to make changes in this specification sheet and is subject to change without prior notice.

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