

Silicon NPT Planar IGBT

Description

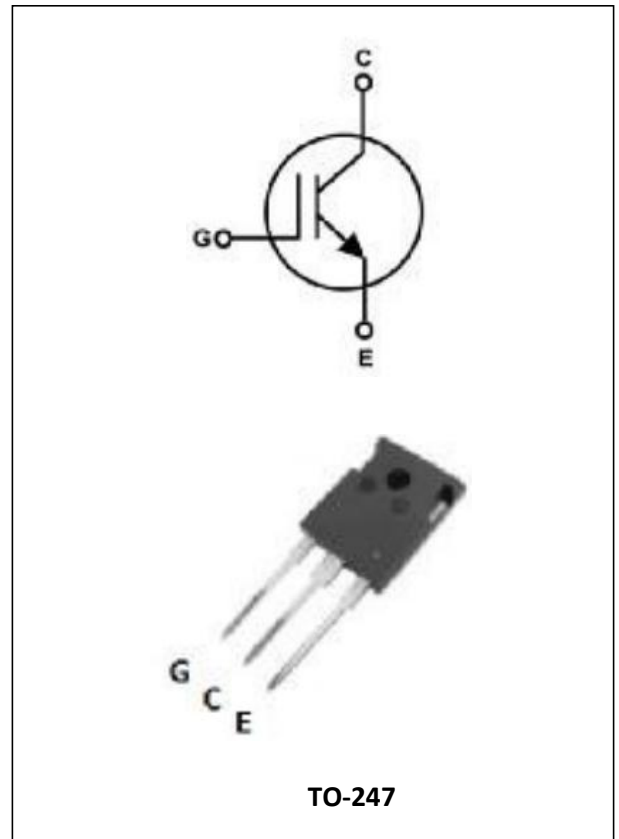
The MLG25N120RK is use advanced NPT technology and integrated with Free Wheeling .The 1350V IGBT offers superior conduction and switching performances.

General Features

- ① 1350V Breakdown Voltage
- ② Low saturation voltage:VCE(sat), typ=2.5V @IC=25A and TC=25°C
- ③ FS Trench Technology,Positive temperature coefficient

Application

- ① Solar Converters
- ② Welding Converters
- ③ UPS



Package Marking And Ordering Information:

Ordering Codes	Package	Product Code	Packing
MLG25N120RK	TO-247	G25N120RK	Tube

Electrical Characteristics @ Tc=25°C (unless otherwise specified)

Limited Parameters:

Symbol	Parameter	Value	Units
V _{CES}	Collector-Emitter Voltage	1350	V
V _{GES}	Gate-Emitter Voltage	+/-20	V
I _c	Collector Current	50	A
	Collector Current @Tc=100°C	25	A
I _{CM}	Pulsed Collector Current	75	A
P _D	Total Dissipation at Ta=25°C	208	W
	Total Dissipation at @Tc=100°C	83	
T _j	Operating Junction and Storage Temperature Range	-55 to +175	°C
T _L	Max Temperature For Soldering	265	°C

Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{CES}	Collector-Emitter Voltage	$V_{GE} = 0V, I_{CE} = 250\mu A$	1350			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$V_{GE} = 15V, I_C = 25A$		2.5	3.2	V
$V_{GE(th)}$	Gated Threshold Voltage	$V_{CE} = V_{GE}, I_C = 1mA$	4.0	5.5	6.5	V
I_{CES}	Collector-Emitter Leakage Current	$V_{GE} = 0V, V_{CE} = 1350V$			1.0	μA
$I_{GES(F)}$	Gate to Emitter Forward Leakage	$V_{GE} = +20V$			100	nA
$I_{GES(R)}$	Gate to Emitter Reverse Leakage	$V_{GE} = -20V$			-100	nA
C_{ies}	Input Capacitance	$V_{GE} = 0V, V_{CE} = 30V, f = 1.0MHz$		2370		pF
C_{oes}	Output Capacitance			59		pF
C_{res}	Reverse Transfer Capacitance			43		pF
Q_g	Total Gate Charge			142		nC
Q_{ge}	Gate to Emitter Charge	$V_{CE} = 960V, I_C = 25A, V_{GE} = 15V$		23		nC
Q_{gc}	Gate to Collector Charge			75		nC

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$td(on)$	Turn-on Delay Time	$V_{CE} = 600V, I_C = 25A$ $V_{GE} = 15V, R_G = 10\Omega$		34		nS
tr	Rise Time			36		nS
$td(off)$	Turn-off Delay Time			198		nS
tf	Fall Time			75		nS

Symbol	Parameter	Typ	MAX	Units
$R_{\theta JC}$	Thermal Resistance, Junction to case for IGBT	--	0.6	$^{\circ}C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	--	40	$^{\circ}C/W$

Typical Performance Characteristics

Figure 1. Typical Output Characteristics

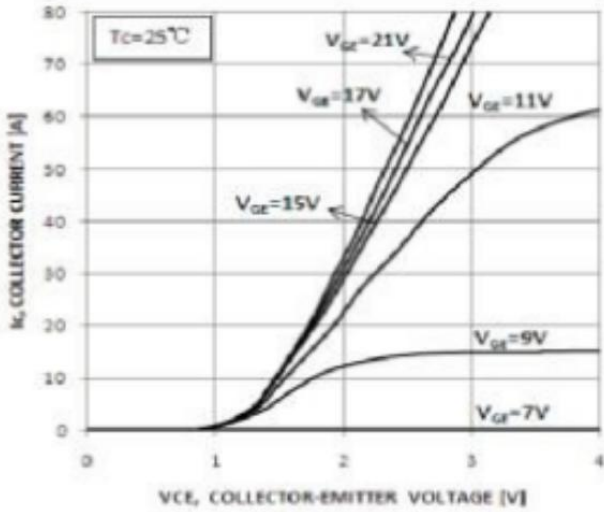


Figure 2. Typical Output Characteristics

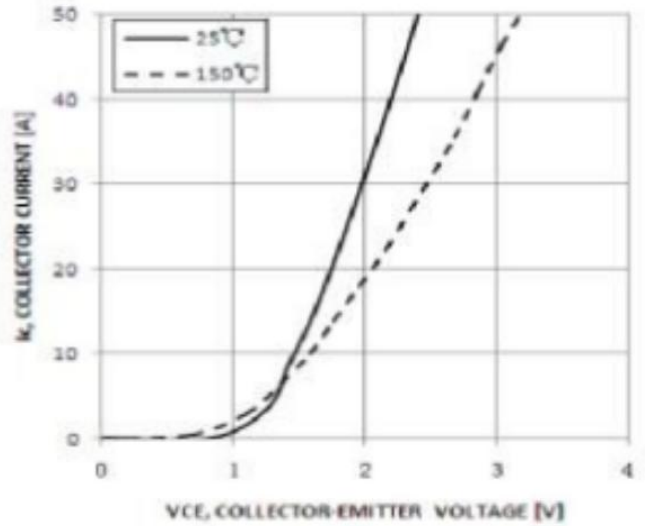


Figure 3 Typical Saturation Voltage vs. Junction Temperature

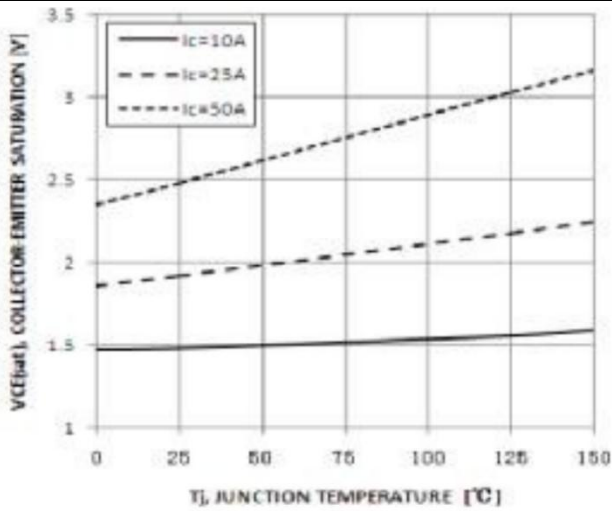


Figure 4. Typical Saturation Voltage vs, Gate-Emitter Voltage

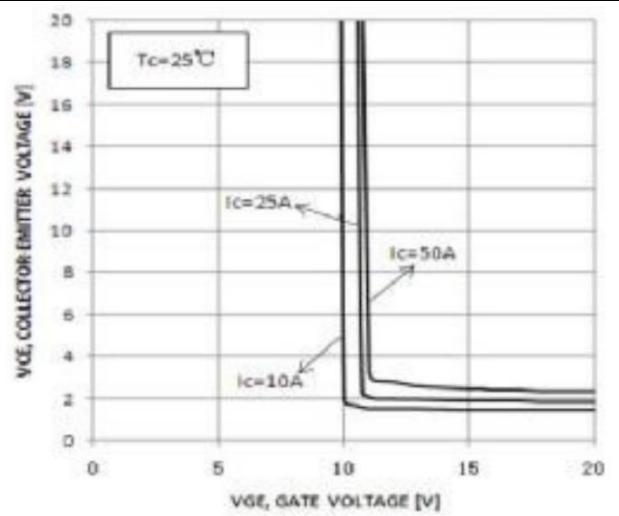


Figure 5. Typical Saturation Voltage vs.Gate-Emitter Voltage

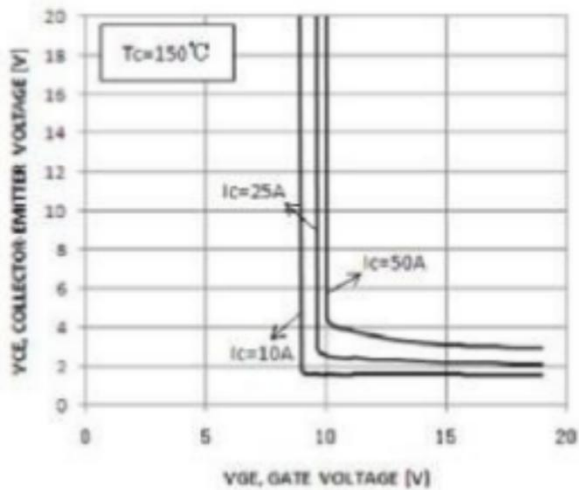


Figure 6. Typical Capacitance Characteristics

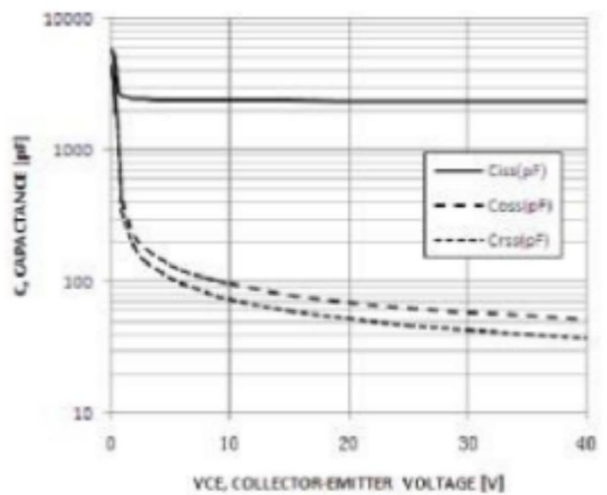


Figure 7. Typical Turn-On Characteristics vs. Gate Resistance

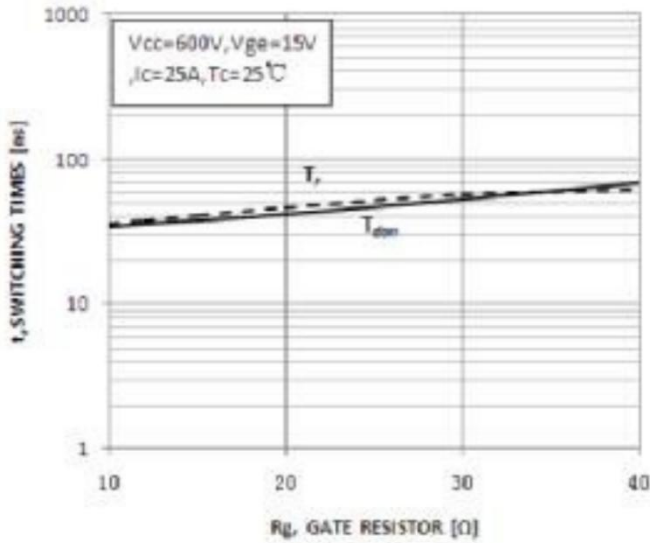


Figure 8. Typical Turn-Off Characteristics vs. Gate Resistance

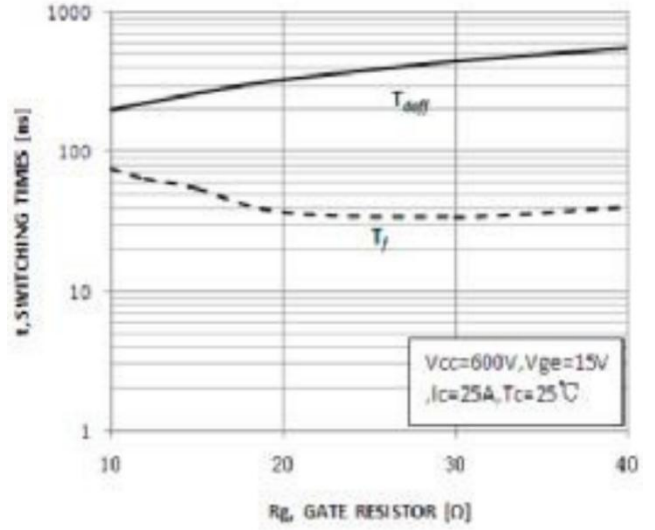


Figure 9. Typical Switching Losses vs. Gate Resistance

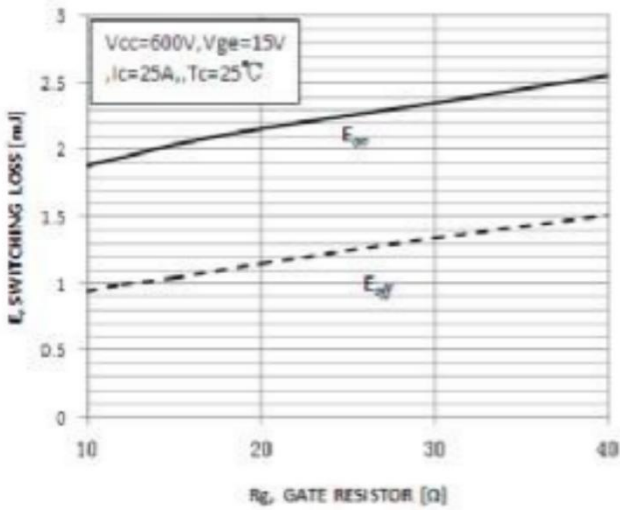


Figure 10. Typical Turn-On Characteristics vs. Collector Current

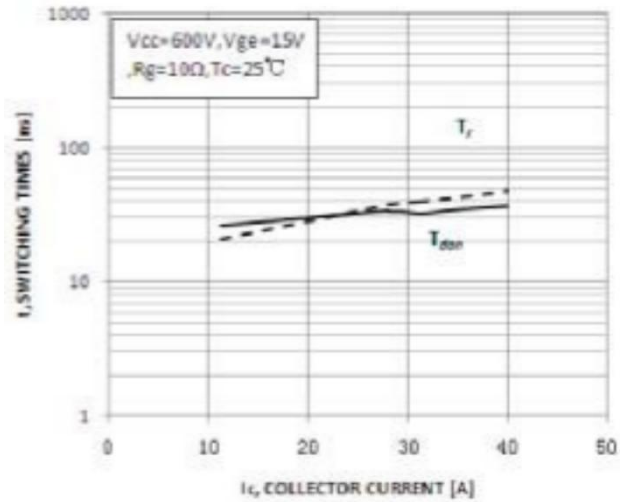


Figure 11. Typical Turn-Off Characteristics vs. Collector Current

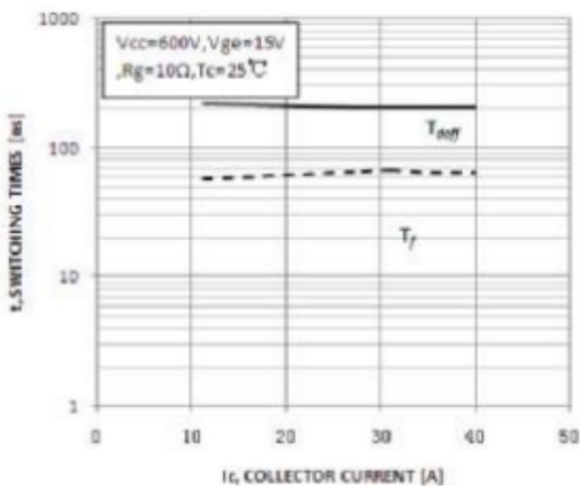


Figure 12. Typical Switching Losses vs. Collector Current

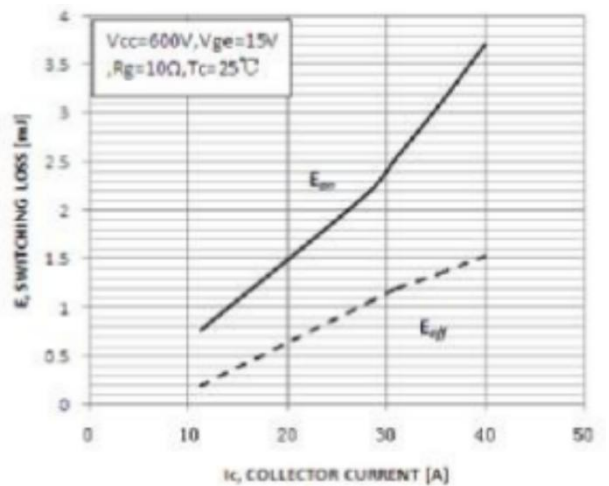


Figure13. Typical IGBT Forward Safe Operating Area

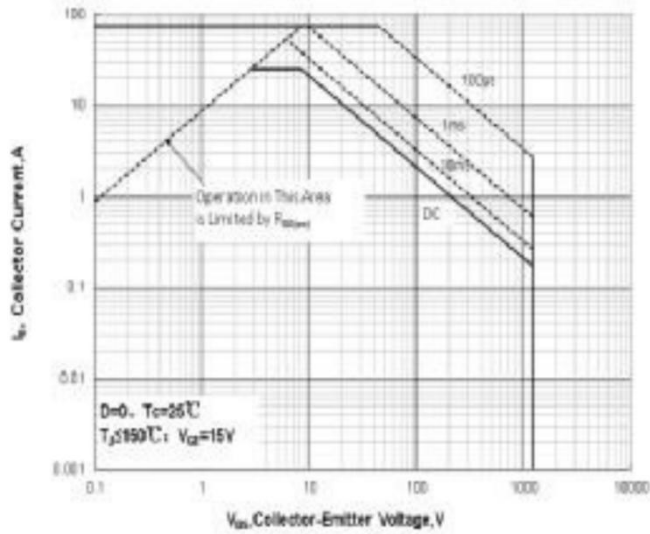


Figure 14. Typical Gate Charge

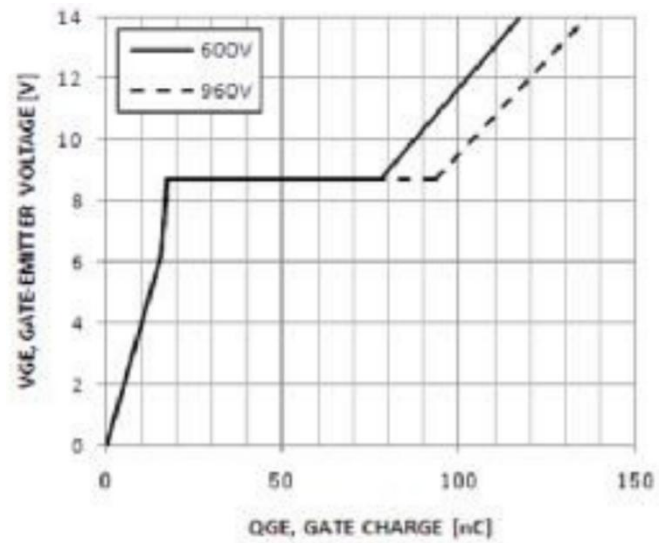


Figure 15. Collector Current vs. Case Temperature

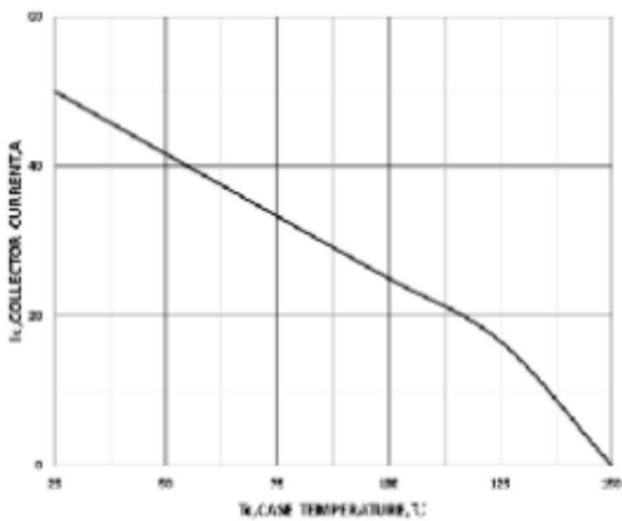


Figure 16. Power Dissipation vs. Case Temperature

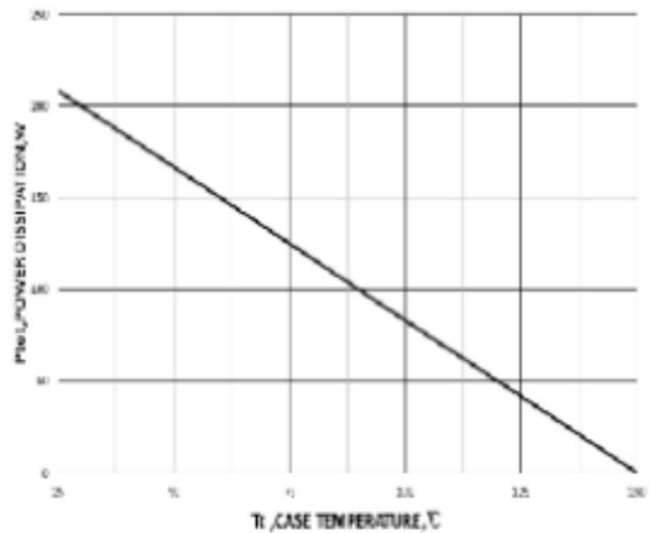
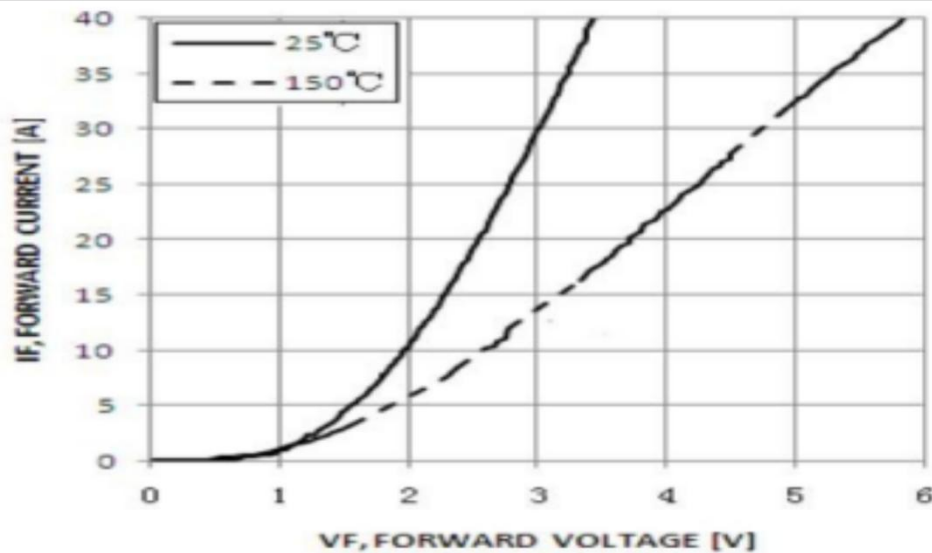
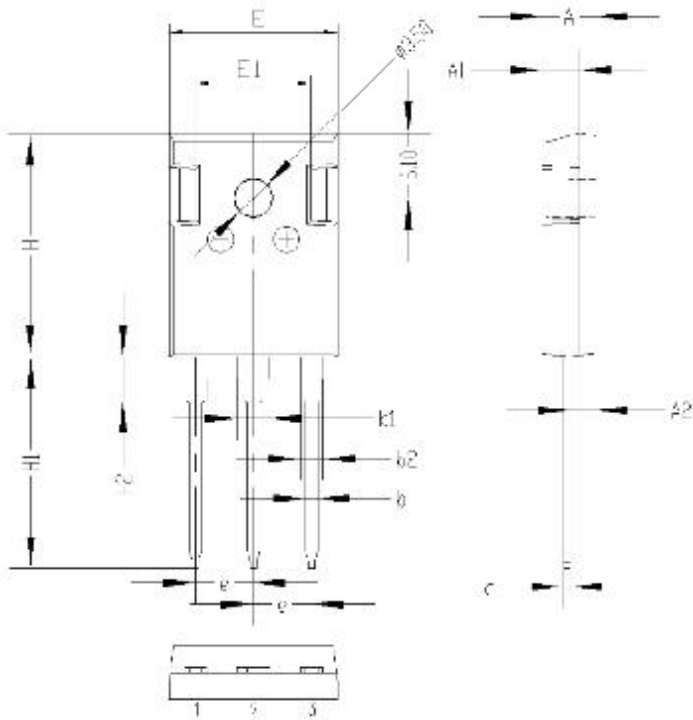


Figure 17. Typical Diode Forward Characteristics



Package Information



Symbol	单位 mm		
	Min	Nom	Max
A	4.8	5.00	5.20
A1	3.3	3.5	3.7
A2	2.20	2.40	2.60
b	1.00	1.2	1.40
b1	2.90	3.10	3.30
b2	1.80	2.00	2.20
c	0.50	0.60	0.70
e	5.25	5.45	5.65
E	15.2	15.7	16.2
H	20.8	21	21.2
H1	19.5	20.0	20.5
H2	3.9	4.1	4.3
G	5.9	6.1	6.3
ΦP	3.30	3.50	3.70

TO-247 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.

CONTACT:

深圳市迈诺斯科技有限公司（总部）

地址：深圳市福田区华富街道田面社区深南中路4026号田面城市大厦22B-22C

邮编：518025

电话：0755-83273777

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Minos](#) manufacturer:

Other Similar products are found below :

[MDT35P10D](#) [IRF3205](#) [MD33N25](#) [MP18N20](#) [MPT035N08](#) [MP50N06](#) [MPF5N65](#) [MPG55N06](#) [MPF50N25](#) [MPG200N08](#) [MPG100N03](#)
[MP180N06](#) [L7806CV](#) [MPT028N10](#) [MBRF30100CT](#) [LA4440](#) [TIP42C](#) [C2073](#) [MPG80N06](#) [MPG100N06](#) [L7815CV](#) [L7805CV](#) [BT137-600E](#)
[TIP41C](#) [MPT65N08](#) [TTA1943](#) [MD23N50](#) [MPG180N10P](#) [MPG60NF06](#) [MPG08N68S](#) [MBR10100CT](#) [MBRF10100CT](#) [MBR20100CT](#)
[MBR30100CT](#) [MBRF20100CT](#) [MPG120N06](#) [MPF13N50](#) [MPG30N10](#) [MPF8N65](#) [MD200N08](#) [MLG40T65FUK](#) [MP9N20](#) [MPG150N10P](#)
[A940](#) [L7905CV](#) [MPF7N65](#) [MP150N08](#) [MPG60N10P](#) [MJL21194](#) [MPG30N06](#)