迈诺斯科技

MLG25N135RK

Silicon NPT Planar IGBT

Description

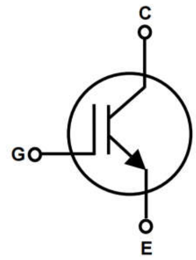
The MLG25N135RK is use advanced NPT technology and integrated with Free Wheeling .The 1350V IGBT offers superior conduction and switching performances.

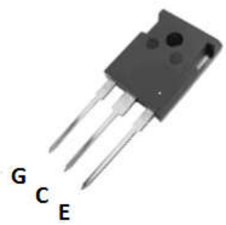
General Features

① 1350V Breakdown Voltage
② Low saturation voltage:$V_{CE(sat)}$, t_{yp}=2.5V
  @I_C=25A and T_C=25℃
③ FS Tench Technology,Positive temperature coefficient

Application

① Solar Converters
② Welding Converters
③ UPS





TO247

Electrical Characteristics

@ Tc=25℃(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℃	25	A
I_{CM}	Pulsed Collector Current	75	A
P_D	Total Dissipation at Ta=25℃	208	W
	Total Dissipation at @Tc=100℃	83	
T_j	Operating Junction and Storage Temperature Range	-55 to +175	℃
T_L	Max Temperature For Soldering	265	℃

Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{CES}	Collector-Emitter Voltage	V_{GE}=0V, I_{CE}=250μA	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	uA
$I_{GES(F)}$	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	V_{CE}=960V I_C=25A V_{GE}=15V		142		nC
Q_{ge}	Gate to Emitter Charge			23		nC
Q_{gc}	Gate to Collector Charge			75		nC

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$t_{d(on)}$	Turn-on Delay Time	V_{CE}=600V,I_C=25A V_{GE}=15V,R_G=10Ω		34		nS
t_r	Rise Time			36		nS
$t_{d(off)}$	Turn-off Delay Time			198		nS
t_f	Fall Time			75		nS

Symbol	Paramter	Typ	MAX	Units
$R_{\theta JC}$	Themal Resistance,Junction to case for IGBT	--	0.6	℃/W
$R_{\theta JA}$	Themal Resistance,Junction to Ambient	--	40	℃/W

Typical Performance Characteristics

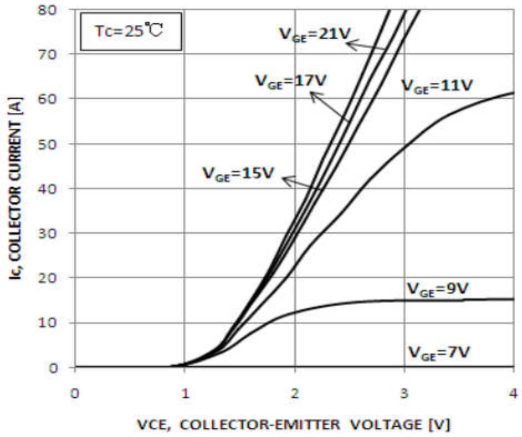


Figure 1. **Typical Output Characteristics**

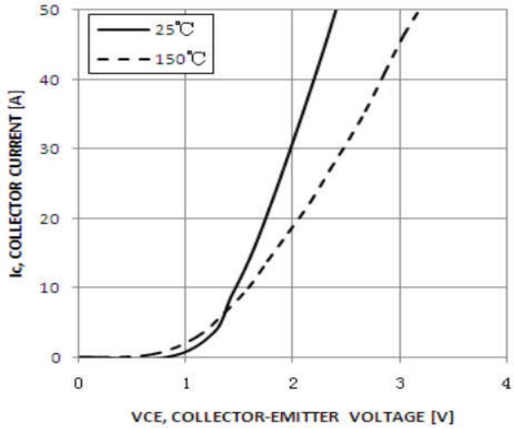


Figure 2. **Typical Output Characteristics**

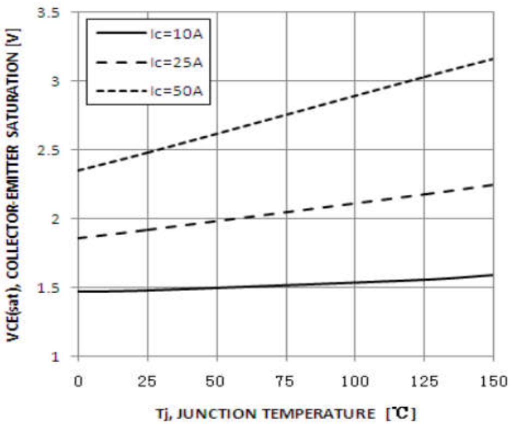


Figure 3. **Typical Saturation Voltage vs.Junction Temperature**

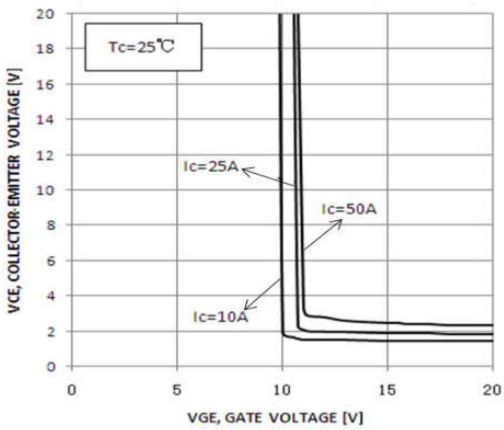


Figure 4. **Typical Saturation Voltage vs. Gate-Emitter Voltage**

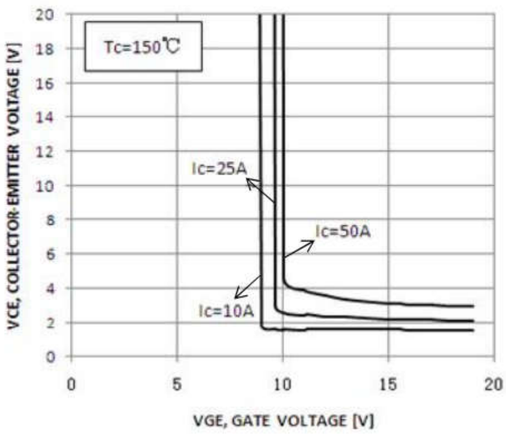


Figure 5. **Typical Saturation Voltage vs. Gate-Emitter Voltage**

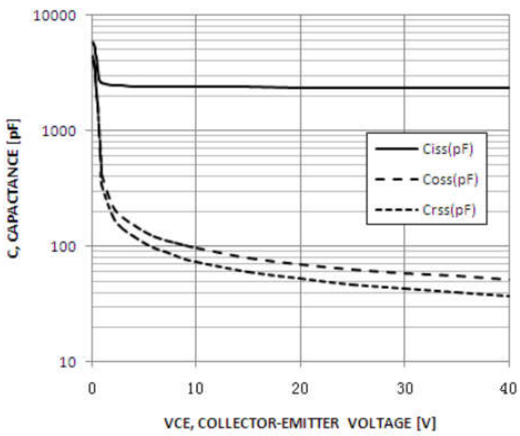


Figure 6. **Typical Capacitance Characteristics**

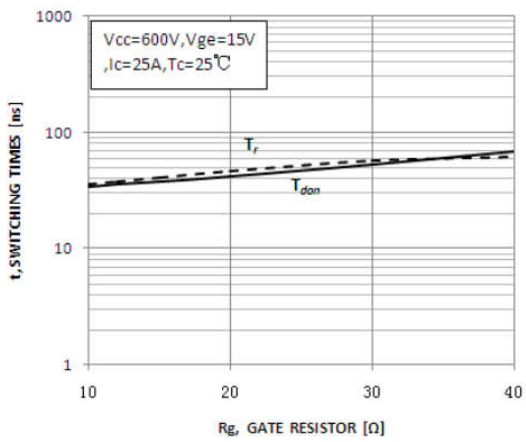


Figure 7. **Typical Turn-On Characteristics vs. Gate Resistance**

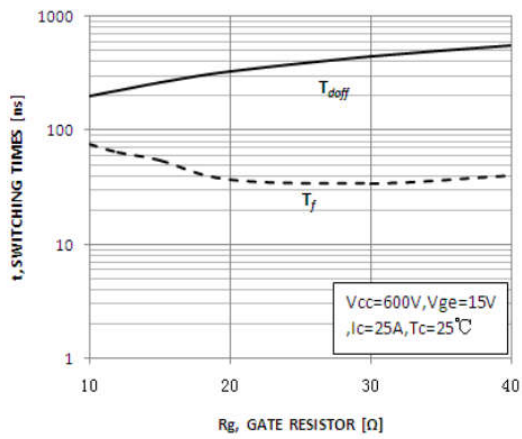


Figure 8. **Typical Turn-Off Characteristics vs.Gate Resistance**

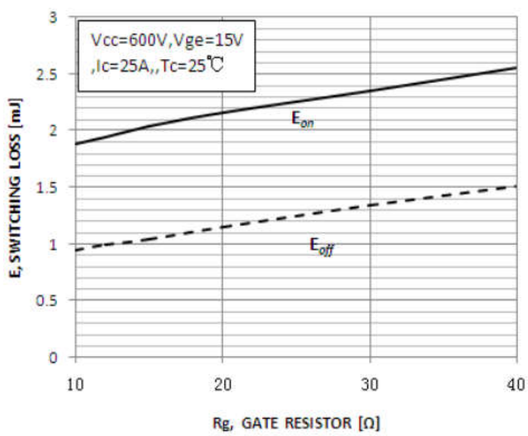


Figure 9. **Typical Switching Losses vs. Gate Resistance**

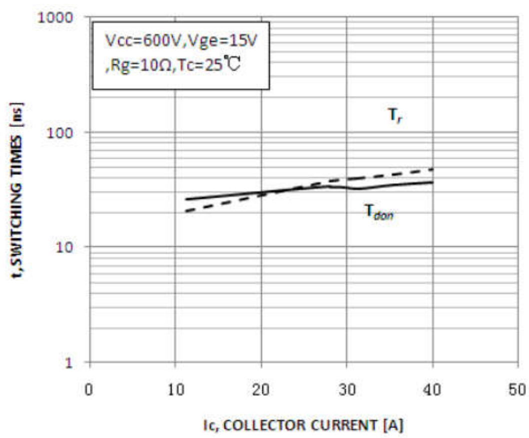


Figure 10. **Typical Turn-On Characteristics vs. Collector Current**

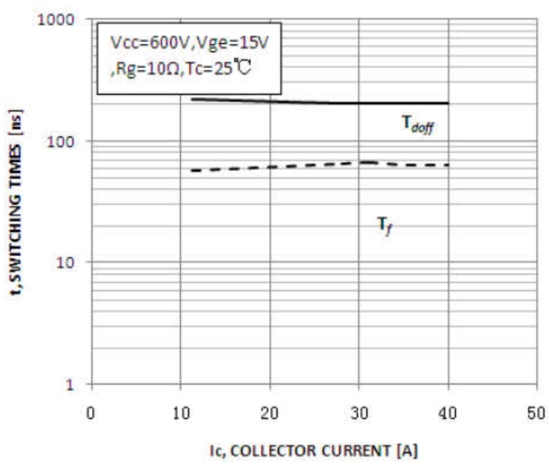


Figure 11. **Typical Turn-Off Characteristics vs. Collector Current**

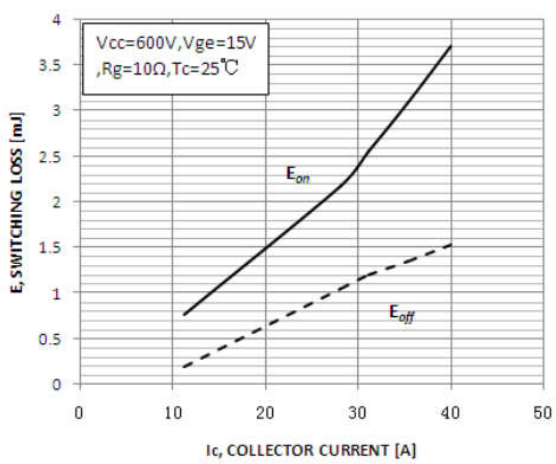


Figure 12. **Typical Switching Losses vs. Collector Current**

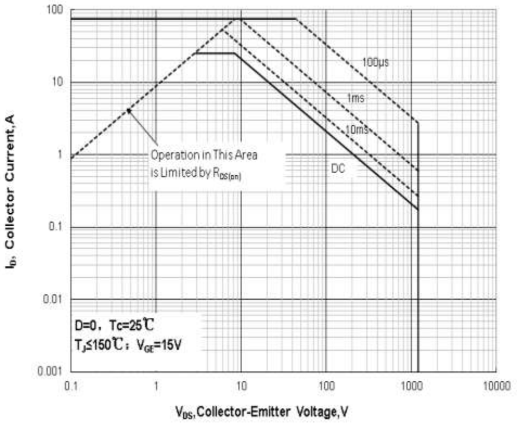


Figure 13. **Typical IGBT Forward Safe Operating Area**

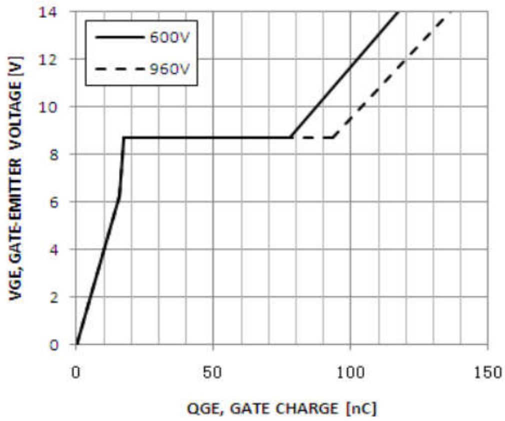


Figure 14. **Typical Gate Charge**

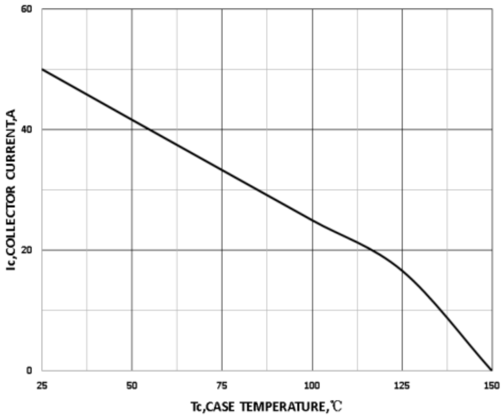


Figure 15. **Collector Current vs.Case Temperature**

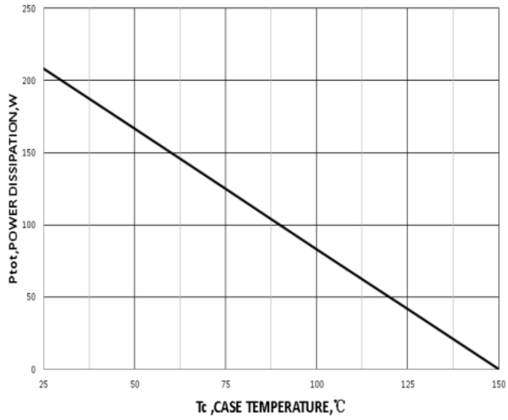


Figure 16. **Power Dissipation vs.Case Temperature**

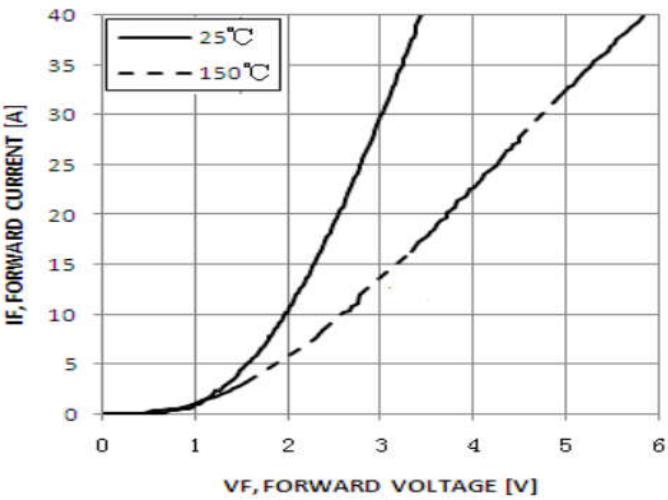
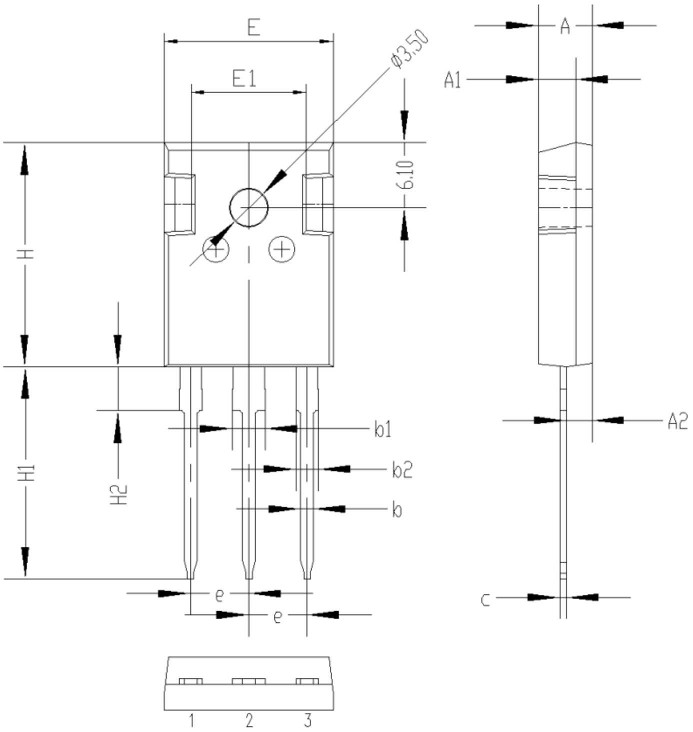


Figure 17. **Typical Diode Forward Characteristics**

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 withoutprior 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