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مشهد خیام شمالی 63 خیابان پردیس 3

برای کسب اطلاعات بیشتر بر روی لینک ها کلیک کنید

- 7 سال سابقه آموزش تعمیرات تخصصی دستگاه های جوش اینورتری تک فاز و 3 فاز
- 7 سال سابقه فروش قطعات الکترونیکی دستگاه جوش تک فاز و 3 فاز
- آموزش تخصصی تحلیل دستگاه های جوش اینورتری مختص ابراز فروشان
- آموزش تخصصی ابراز آلات شارژی

FGL60N100BNTD
1000 V, 60 A NPT Trench IGBT

Features

- High Speed Switching
- Low Saturation Voltage: $V_{CE(sat)}$ = 2.5 V @ I_C = 60 A
- High Input Impedance
- Built-in Fast Recovery Diode

Applications

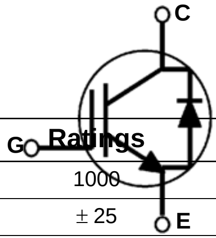
- UPS, Welder

General Description

Using Fairchild's proprietary trench design and advanced NPT technology, the 1000V NPT IGBT offers superior conduction and switching performances, high avalanche ruggedness and easy parallel operation. This device offers the optimum performance for hard switching application such as UPS, welder applications.


G C E

TO-264 3L



Absolute Maximum Ratings

Symbol	Description		Ratings	Unit
V_{CES}	Collector to Emitter Voltage		1000	V
V_{GES}	Gate to Emitter Voltage		± 25	V
I_C	Collector Current	@ T_C = 25°C	60	A
	Collector Current	@ T_C = 100°C	42	A
$I_{CM\ (1)}$	Pulsed Collector Current	@ T_C = 25°C	200	A
I_F	Diode Continuous Forward Current	@ T_C = 100°C	15	A
P_D	Maximum Power Dissipation	@ T_C = 25°C	180	W
	Maximum Power Dissipation	@ T_C = 100°C	72	W
T_J	Operating Junction Temperature		-55 to +150	°C
T_{stg}	Storage Temperature Range		-55 to +150	°C
T_L	Maximum Lead Temp. for soldering Purposes, 1/8" from case for 5 seconds		300	°C

Notes:
1: Repetitive rating: Pulse width limited by max. junction temperature

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{\theta JC}$(IGBT)	Thermal Resistance, Junction to Case	0.69	°C/W
$R_{\theta JC}$(Diode)	Thermal Resistance, Junction to Case	2.08	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	25	°C/W

Package Marking and Ordering Information

Part Number	Top Mark	Package	Packing Method	Reel Size	Tape Width	Quantity
FGL60N100BNTD	FGL60N100BNTD	TO-264	Tube	N/A	N/A	30

Electrical Characteristics of the IGBT T_C = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
BV_{CES}	Collector to Emitter Breakdown Voltage	V_{GE} = 0 V, I_C = 1 mA	1000	-	-	V
I_{CES}	Collector Cut-Off Current	V_{CE} = V_{CES}, V_{GE} = 0 V	-	-	1	mA
I_{GES}	G-E Leakage Current	V_{GE} = V_{GES}, V_{CE} = 0 V	-	-	±500	nA
On Characteristics						
$V_{GE(th)}$	G-E Threshold Voltage	I_C = 60 mA, V_{CE} = V_{GE}	4.0	5.0	7.0	V
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage	I_C =10 A, V_{GE} = 15 V	-	1.5	1.8	V
		I_C = 60 A, V_{GE} = 15 V,	-	2.5	2.9	V
Dynamic Characteristics						
C_{ies}	Input Capacitance	V_{CE} = 10 V, V_{GE} = 0 V, f = 1MHz	-	6000	-	pF
C_{oes}	Output Capacitance		-	260	-	pF
C_{res}	Reverse Transfer Capacitance		-	200	-	pF
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{CC} = 600 V, I_C = 60 A, R_G = 51 Ω, V_{GE} = 15 V, Inductive Load, T_C = 25ºC	-	140	-	ns
t_r	Rise Time		-	320	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	630	-	ns
t_f	Fall Time		-	130	-	ns
Q_g	Total Gate Charge	V_{CE} = 600 V, I_C = 60 A, V_{GE} = 15 V, T_C = 25ºC	-	275	-	nC
Q_{ge}	Gate to Emitter Charge		-	45	-	nC
Q_{gc}	Gate to Collector Charge		-	95	-	nC

Electrical Characteristics of the Diode T_C = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max	Unit
V_{FM}	Diode Forward Voltage	I_F = 15 A	-	1.2	1.7	V
		I_F = 60 A	-	1.8	2.1	V
t_{rr}	Diode Reverse Recovery Time	I_F = 60 A, di/dt = 20 A/us	-	1.2	1.5	us
I_R	Instantaneous	V_{RRM} = 1000 V	-	0.05	2.0	uA

Typical Performance Characteristics

Figure 1. Typical Output Characteristics

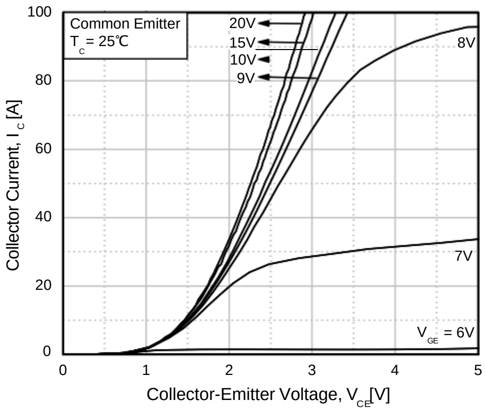


Figure 2. Typical Saturation Voltage Characteristics

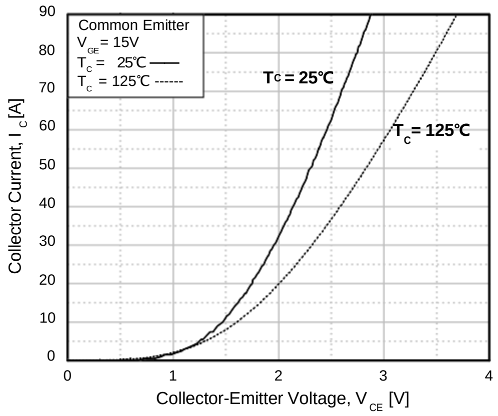


Figure 3. Saturation Voltage vs. Case Temperature at Variant Current Level

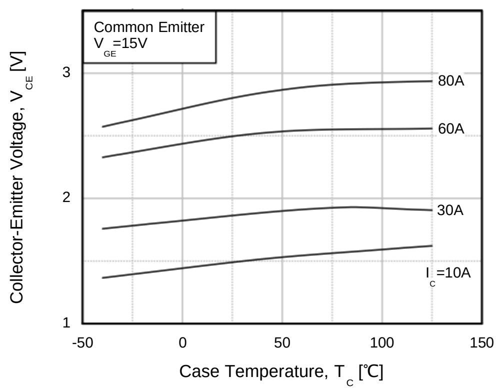


Figure 4. Saturation Voltage vs. V_{GE}

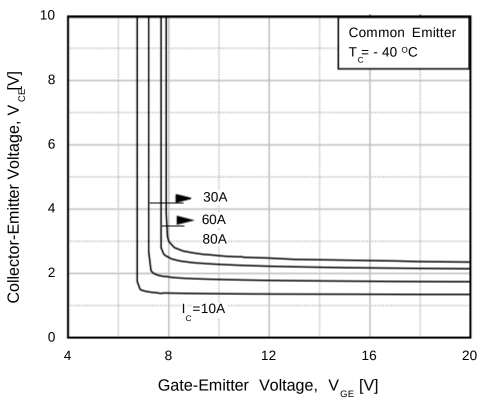


Figure 5. Saturation Voltage vs. V_{GE}

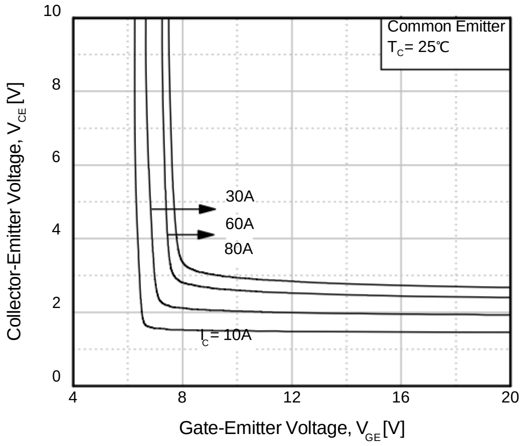
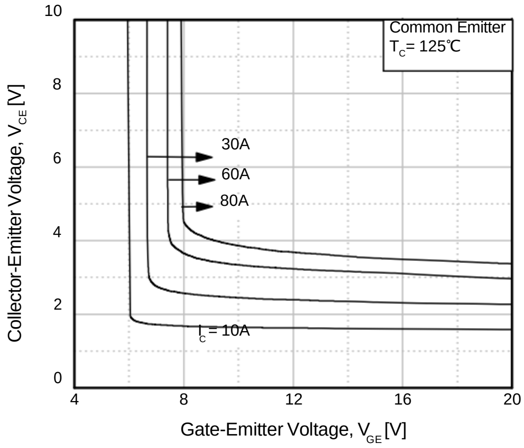


Figure 6. Saturation Voltage vs. V_{GE}



Typical Performance Characteristics

Figure 7. Capacitance Characteristics

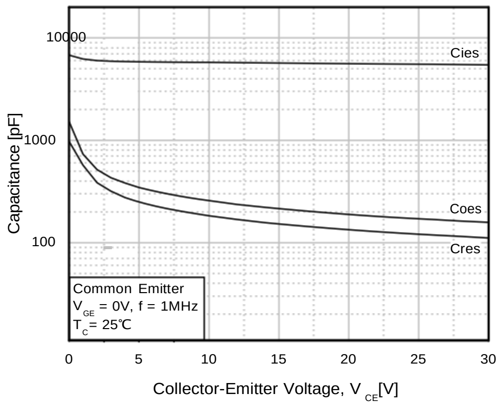


Figure 8. Switching Loss vs. Gate Resistance

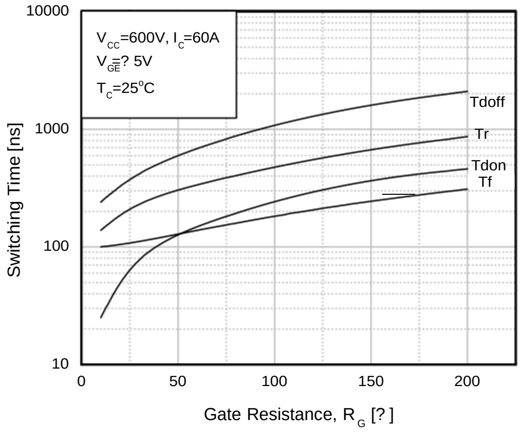


Figure 9. Switching Characteristics vs. Collector Current

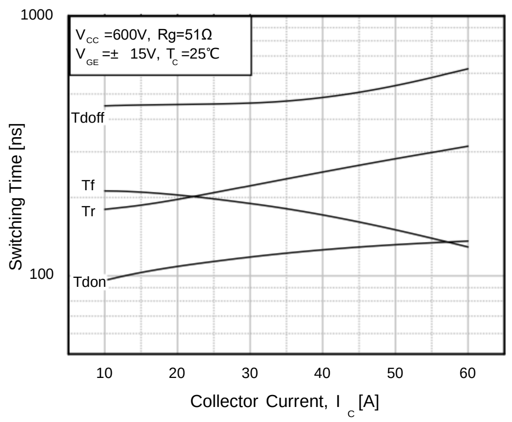


Figure 10. Gate Charge Characteristics

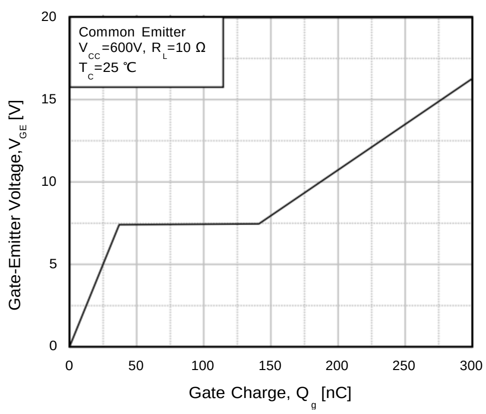


Figure 11. SOA Characteristics

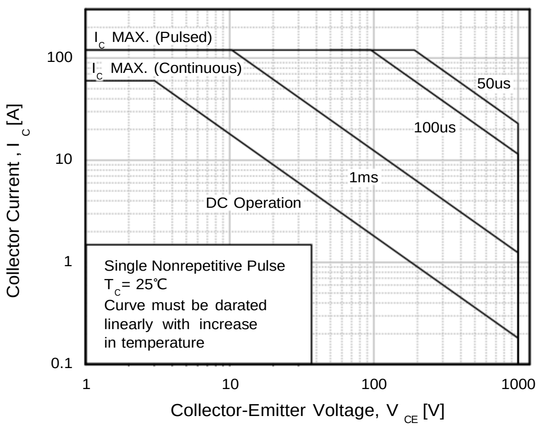
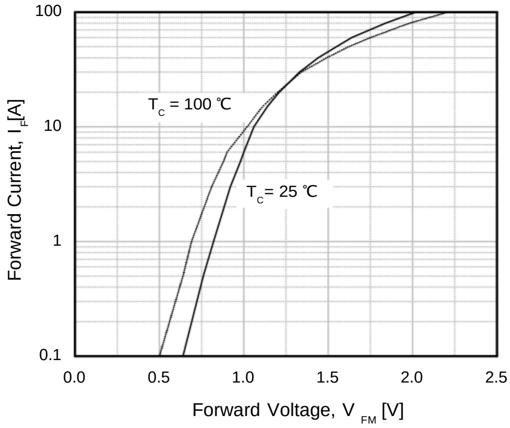


Figure 12. Forward Characteristics



Typical Performance Characteristics

Figure 13. Reverse Recovery Characteristics vs. di/dt

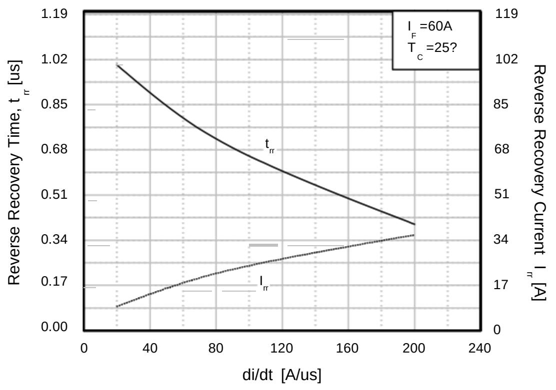


Figure 14. Reverse Recovery Characteristics vs. Forward Current

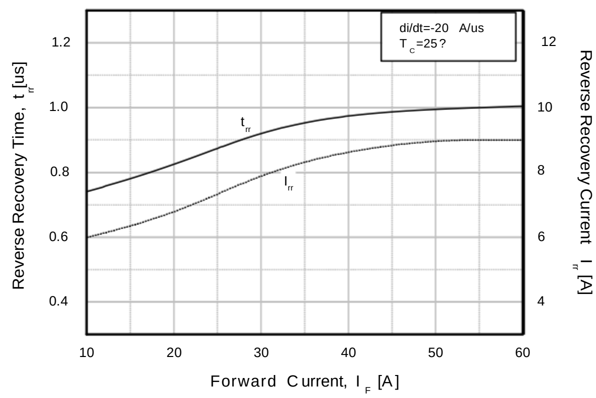


Figure 15. Reverse Current vs. Reverse Voltage

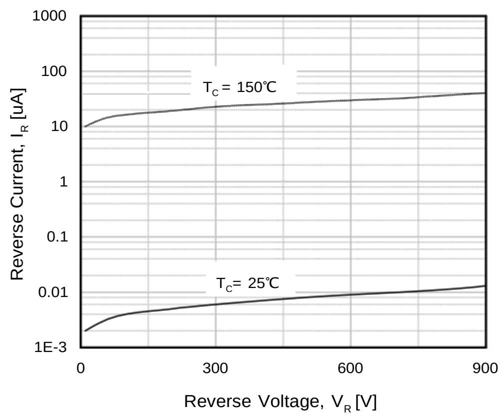


Figure 16. Junction Capacitance

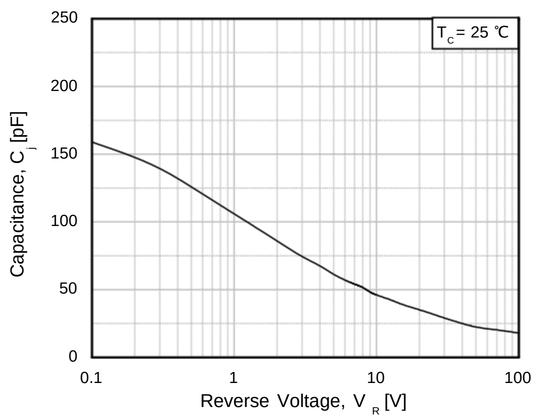
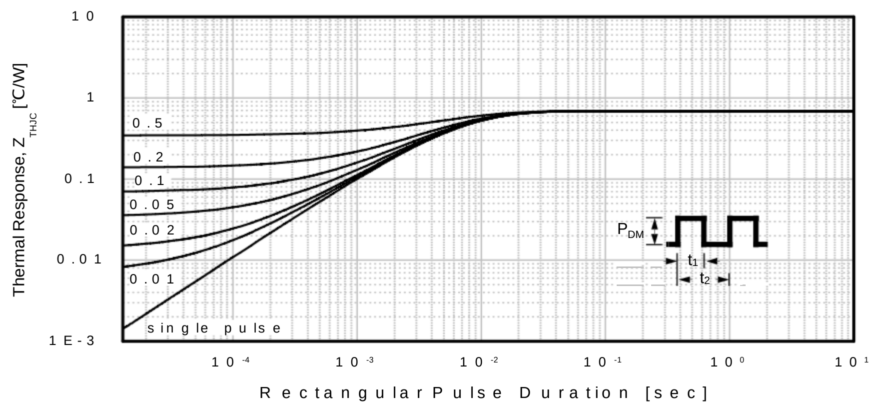


Figure 17.Transient Thermal Impedance of IGBT



Mechanical Dimensions

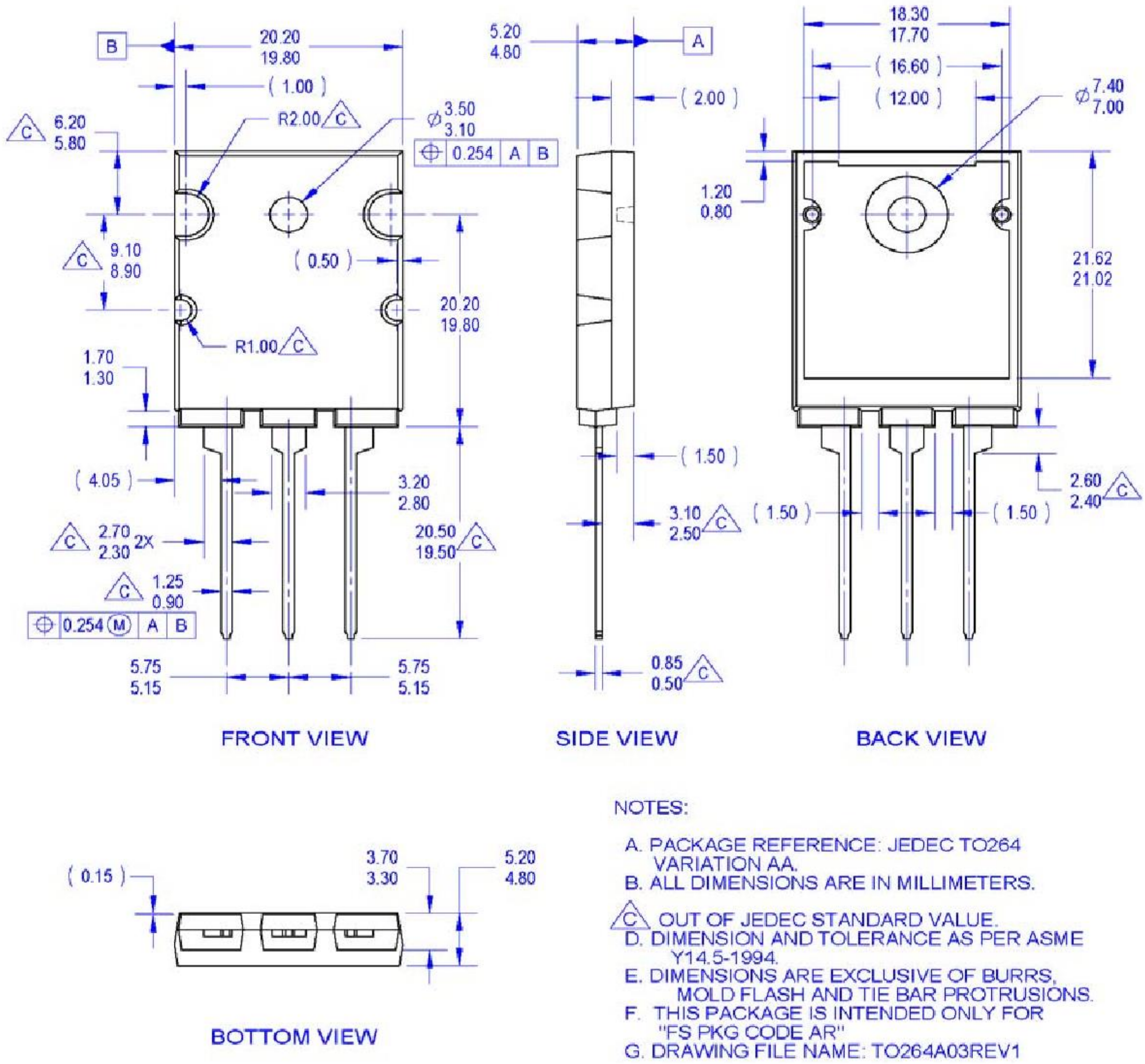


Figure 18. TO-264 3L - 3LD; TO264; MOLDED; JEDEC VARIATION AA

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