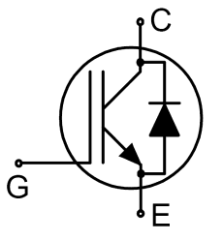
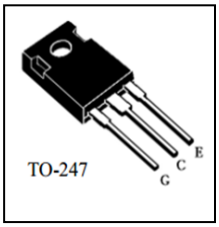
JT075N065WED

主要参数 MAIN CHARACTERISTICS

I_C	75A
V_{CES}	650V
$V_{cesat-typ}$ （@V_{ge}=15V）	1.75V

封装 Package





用途

- 逆变器
- UPS 电源

APPLICATIONS

- General purpose inverters
- UPS

产品特性

- 低栅极电荷
- Trench FS 技术,
- 通态压降, V_{CE}(sat), typ = 1.75V @ Ic = 75A and Tc = 25°C
- RoHS 产品

FEATURES

- Low gate charge
- Trench FS Technology,
- saturation voltage: V_{CE}(sat), typ = 1.75V@ Ic = 75A and TC = 25°C
- RoHS product

订货信息 ORDER MESSAGE

订 货 型 号 Order codes				印 记 Marking	封 装 Package
有卤-条管 Halogen-Tube	无卤-条管 Halogen-Free-Tube	有卤-编带 Halogen-Reel	无卤-编带 Halogen-Free-Reel		
JT075N065WED-GE-B	JT075N065WED-GE-BR	N/A	N/A	JT075N065WED	TO-247

绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value	单位 Unit
		JT075N065WED	
最高集电极－发射极直流电压 Collector-Emmiter Voltage	V_{ces}	650	V
*连续集电极电流 Collector Current-continuous	I_C T=25℃	150	A
	T=100℃	75	A
最大脉冲集电极极电流（注 1） Collector Current – pulse （note 1）	I_{CM}	300	A
最高栅极发射极电压 Gate-Emmiter Voltage	V_{GES}	±20	V
Turn-off safe area	-	120	A
耗散功率 Power Dissipation	P_D T_C=25℃	539	W
最高结温及存储温度 Operating and Storage Temperature Range	T_J，T_{STG}	-55～+150	℃
引线最高焊接温度 Maximum Lead Temperature for Soldering Purposes	T_L	300	℃

*连续集电极电流由最高结温限制

*Collector current limited by maximum junction temperature

电特性 ELECTRICAL CHARACTERISTICS

项　　目 Parameter	符　号 Symbol	测试条件 Tests conditions	最小 Min	典型 Typ	最大 Max	单位 Units
关态特性 Off –Characteristics						
集电极－发射极击穿电压 Collector-Emmiter Voltage	BV_{CES}	I_C=250μA, V_{GE}=0V	650	-	-	V
击穿电压温度特性 Breakdown Voltage Temperature Coefficient	$\Delta BV_{CES}/\Delta T_J$	I_C=0.5mA, referenced to 25℃	-	0.6	-	V/℃
零栅压下集电极漏电流 Zero Gate Voltage Collector Current	I_{CES}	V_{CE}=650V,　V_{GE}=0V, T_C=25℃	-	-	0.2	mA
正向栅极体漏电流 Gate-body leakage current, forward	I_{GESF}	V_{CE}=0V,　V_{GE} =20V	-	-	200	nA
反向栅极体漏电流 Gate-body leakage current, reverse	I_{GESR}	V_{CE}=0V,　V_{GE} =-20V	-	-	-200	nA
通态特性 On-Characteristics						
阈值电压 Gate Threshold Voltage	$V_{GE(th)}$	V_{CE} = V_{GE} , I_C=250μA	4.5	-	6.5	V
饱和压降 Collector-Emmiter saturation Voltage	V_{CESAT}	V_{GE}=15V　I_C=75A Tc=25℃	-	1.75	2.4	V
动态特性 Dynamic Characteristics						
输入电容 Input capacitance	C_{ies}	V_{CE}=25V, V_{GE}=0V, f=1.0MHz	-	5012	-	pF
输出电容 Output capacitance	C_{oes}		-	430	-	pF
反向传输电容 Reverse transfer capacitance	C_{res}		-	99.6	-	pF
栅极电荷总量 Total Gate Charge	Qg	V_{CC}=520V,I_c=75A,R_G=7.9Ω,V_{GE}=15 V T_C=25℃	-	27.4	-	nC
栅极-反射极 Gate to emitter charge	Qge		-	6.5	-	
栅极-集电极 Gate to collector charge	Qgc		-	11.9	-	
栅极电阻-Gate resistance	Rg	f=1 MHz, open collector	-	3.2	-	Ω
短路电流-short current	Isc	V_{GE}=15V V_{CE}=300V tsc < 5μs	-	320	-	A

电特性 ELECTRICAL CHARACTERISTICS

开关特性 Switching Characteristics						
项　目 Parameter	符　号 Symbol	测试条件 Tests conditions	最小 Min	典型 Typ	最大 Max	单位 Units
开启延迟时间 Turn-On delay time	t_d(on)	V_{CC}=400V,I_c=75A,R_G=7.9Ω V_{GE}=15 V T_C=25℃	-	45.0	-	ns
上升时间 Turn-On rise time	t_r		-	40.0	-	ns
关断延迟时间 Turn-Off delay time	t_d(off)		-	168.0	-	ns
下降时间 Turn-Off Fall time	t_f		-	56.0	-	ns
开通损耗 Turn-On energy	Eon		-	2.32	-	mJ
关断损耗 Turn-off energy	Eoff		-	0.97	-	mJ
总开关损耗 Total switching energy	Etot		-	3.29	-	mJ
反并联二极管特性及最大额定值 **Anti-Parallel Diode Characteristics and Maximum Ratings**						
正向压降 Drain-Source Diode Forward Voltage	V_F	V_{GE}=0V,　I_S=75A	-	2.2	2.9	V
反向恢复时间 Diode Reverse recovery time	t_{rr}	V_{GE}=0V, V_R=200V I_F=75A dI_F/dt=200A/μs　(note 4) T_C=25℃	-	24.5	-	ns
反向恢复电荷 Diode Reverse recovery charge	Qrr		-	20.6	-	nC
反向恢复电流 Diode Reverse recovery Current	I_{RRM}		-	1.64	-	A
反向恢复时间 Diode Reverse recovery time	t_{rr}	V_{GE}=0V, V_R=200V I_F=75A dI_F/dt=200A/μs　(note 4) T_C=150℃	-	195	-	ns
反向恢复电荷 Diode Reverse recovery charge	Qrr		-	731	-	nC
反向恢复电流 Diode Reverse recovery Current	I_{RRM}		-	8.3	-	A

项　目 Parameter	符　号 Symbol	典型 Typ JT075N065WED	单 位 Unit
结到管壳的热阻 Thermal Resistance, Junction to Case	$R_{th(j-c)}$	0.232	℃/W
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	33	℃/W

注释：

1：脉冲宽度由最高结温限制

2：脉冲测试：脉冲宽度≤300μs,占空比≤2％

3：基本与工作温度无关

Notes:

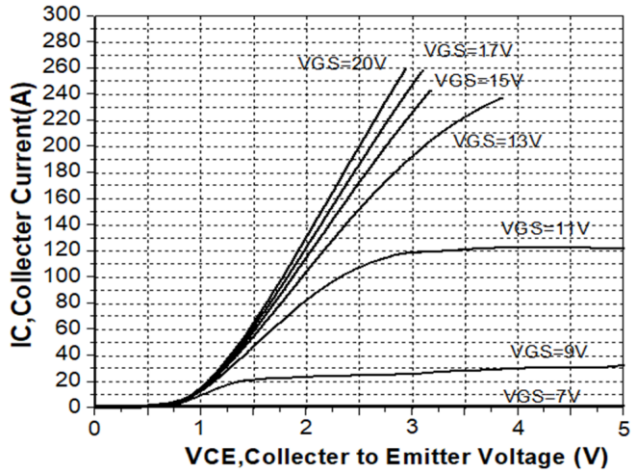
1：Pulse width limited by maximum junction temperature

2：Pulse Test：Pulse Width ≤300μs,Duty Cycle≤2％

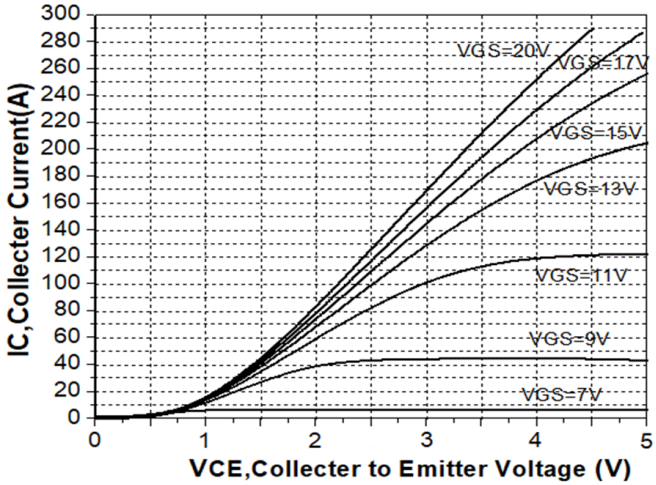
3：Essentially independent of operating temperature

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

Output Characteristics（25℃）

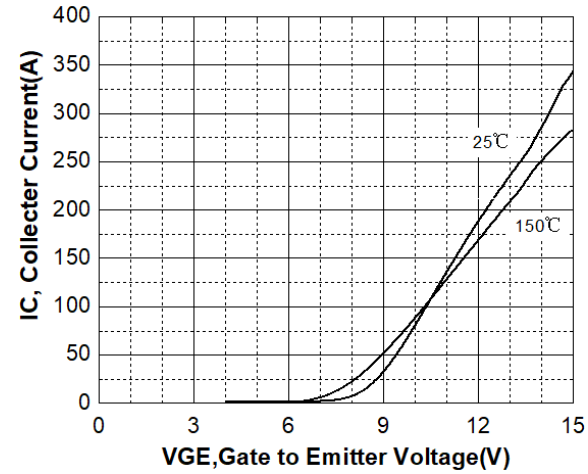


Output Characteristics（150℃）



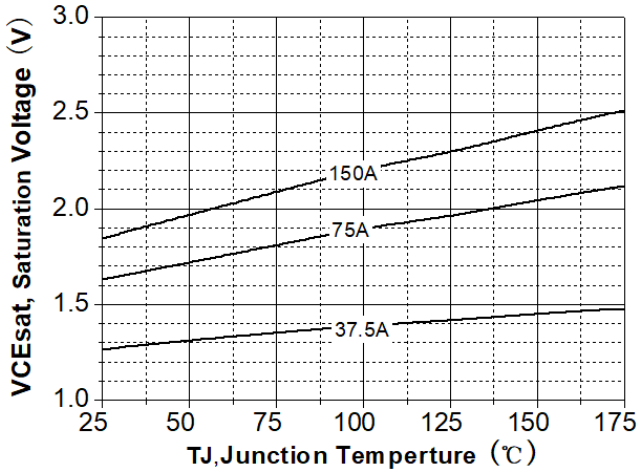
Transfer Characteristics

Vce=20 V



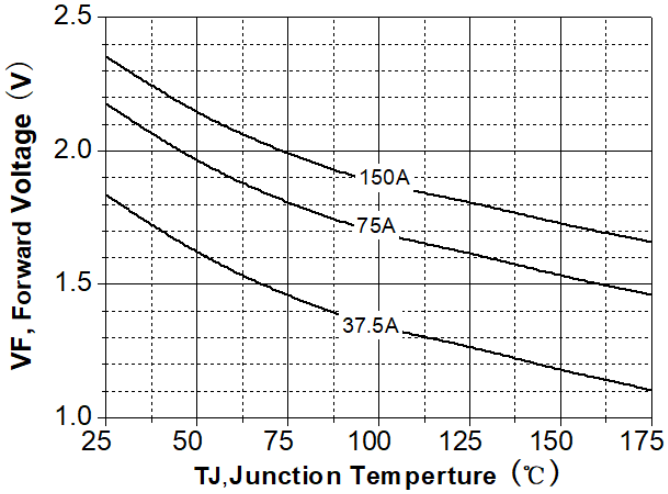
Vcesat vs. Tj

Vge=15V, Ic=37.5A、75A、150A



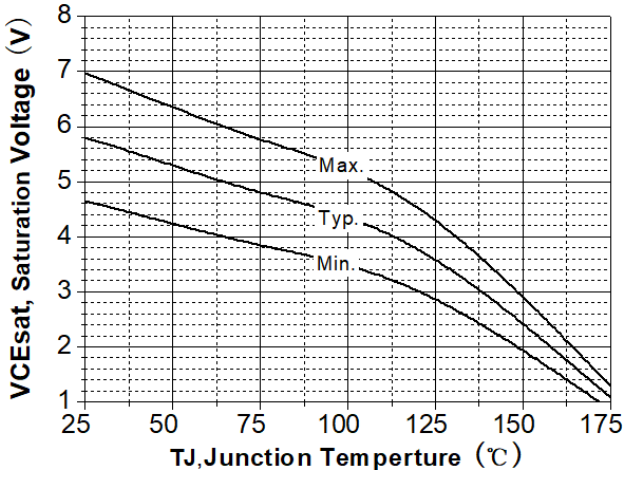
VF vs. Tj

Vge=15V, Ic=37.5A、75A、150A



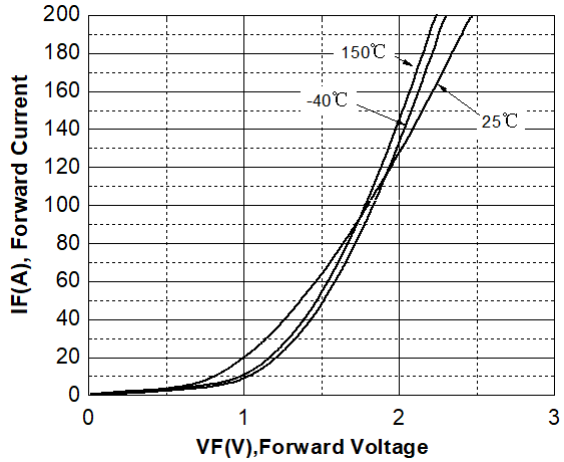
VTH vs. Tj

Ic=250uA



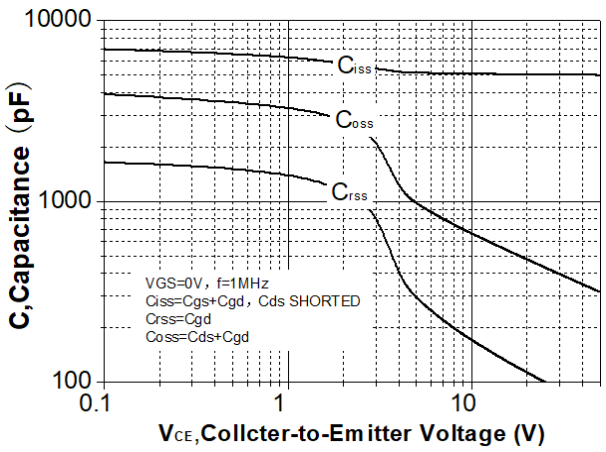
Diode Characteristic

Tj=25℃、150℃、-40℃



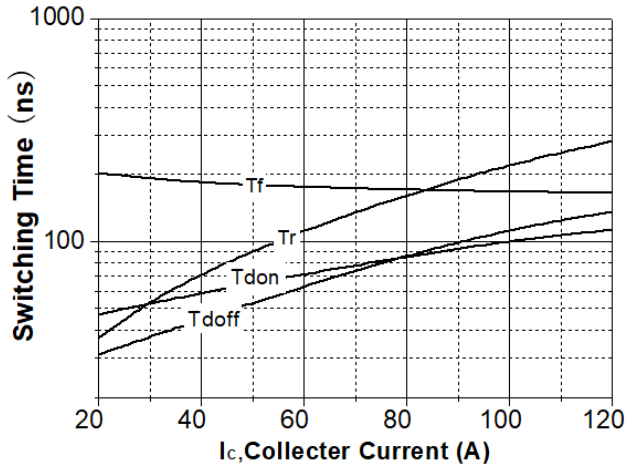
Capacitance Characteristic

Vce=25V,VGE =0V,f=1.0MHZ



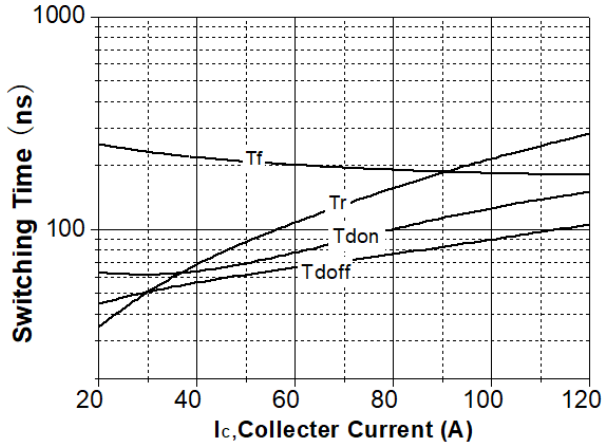
Switching Time vs. IC(25℃)

VCE=400V,VGE=15V, RG=7.9Ω



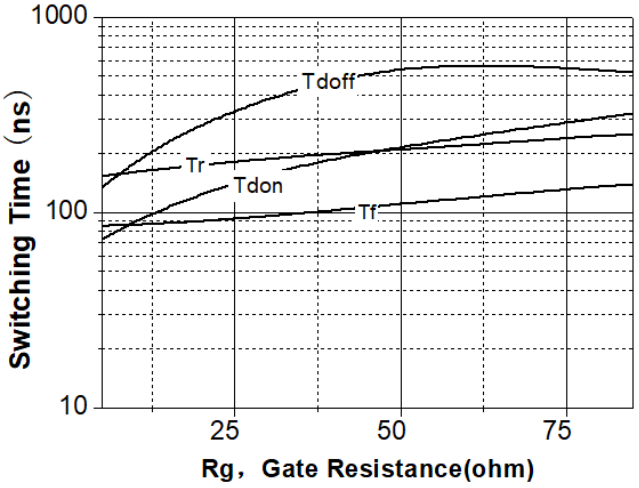
Switching Time vs. IC(150℃)

VCE=400V,VGE=15V, RG=7.9Ω



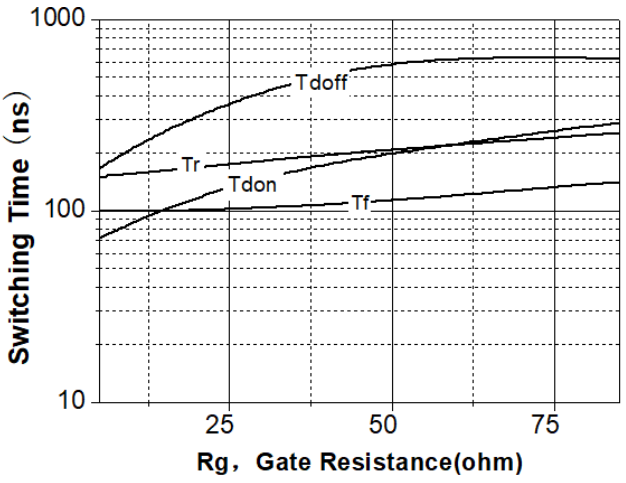
Switching Time vs. Rg(25℃)

VGE=15V,VCE=400V, IC: 75A



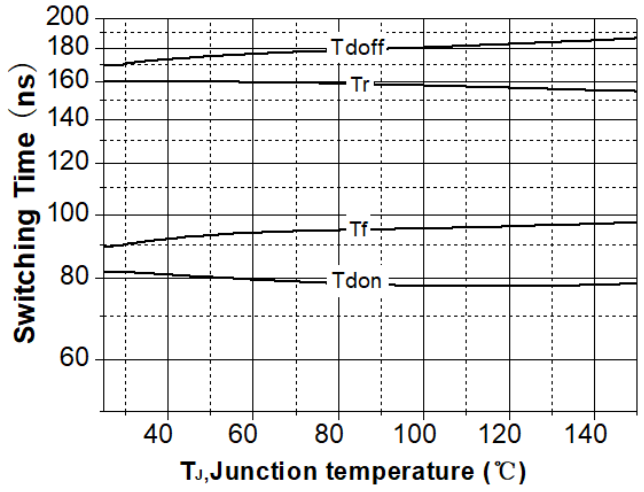
Switching Time vs. Rg(150℃)

VGE=15V,VCE=400V, IC:75A



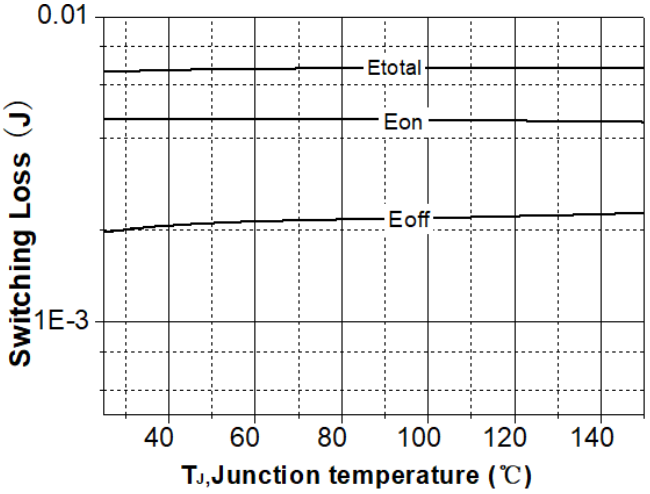
Switching Time vs.Tj

VGE=15V，VCE=400V，IC:75A，Rg=7.9Ω



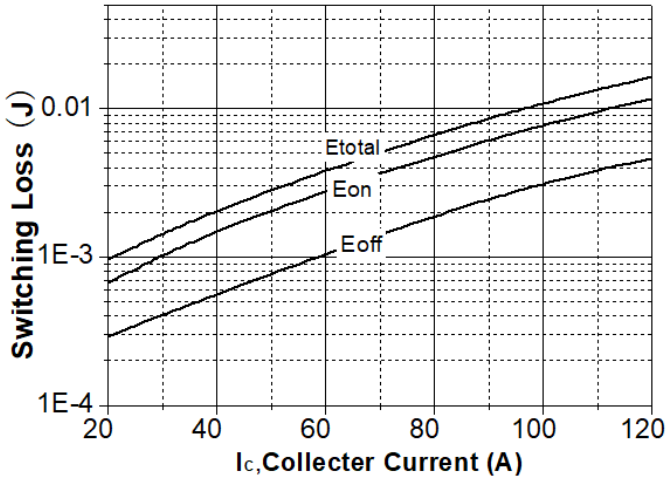
Switching Loss vs. Tj

VGE=15V，VCE=400V，IC:75A ，Rg=7.9Ω



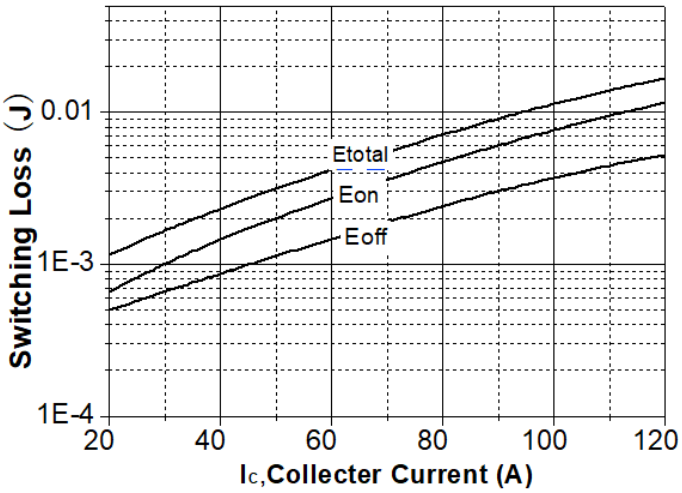
Switching Loss vs. IC(25℃)

VGE=15V,VCE=400V,Rg=7.9Ω



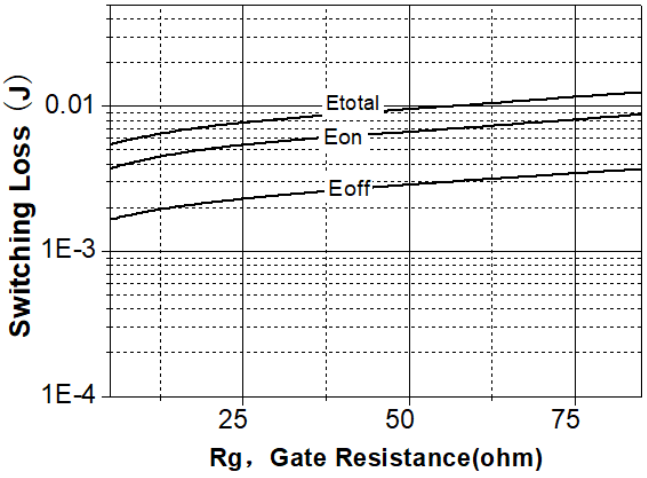
Switching Loss vs. IC(150℃)

VGE=15V,VCE=400V,Rg=7.9Ω



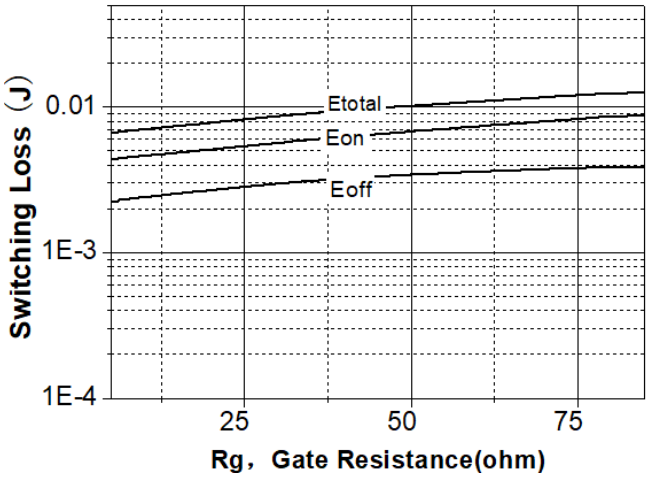
Switching Loss vs. Rg(25℃)

VGE=15V,VCE=400V, IC:75A



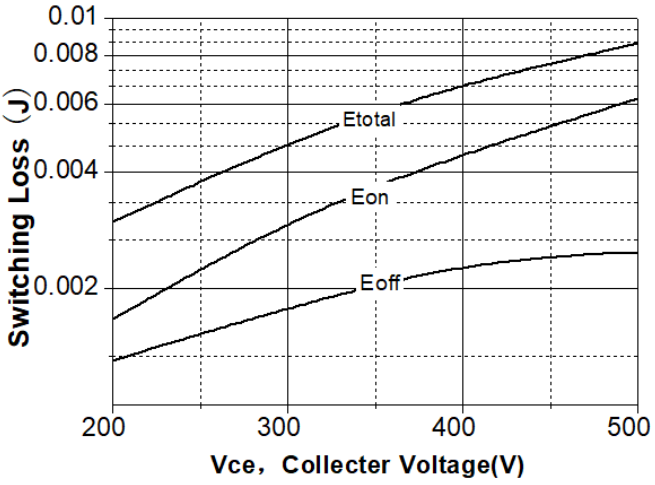
Switching Loss vs. Rg(150℃)

VGE=15V,VCE=400V, IC:75A



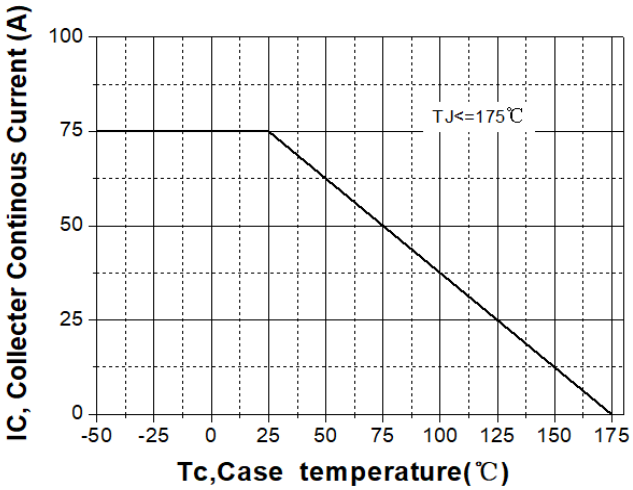
Switching Loss vs. VCE(150℃)

VGE=15V, IC:75A,Rg=7.9Ω



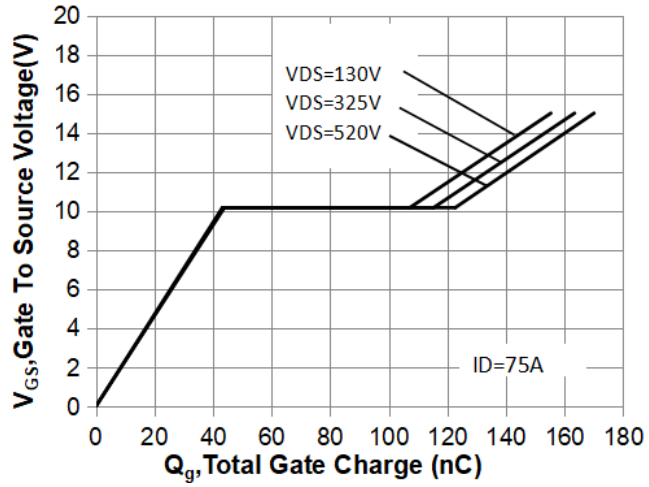
Colletcor current vs.case temperature

VGE≥15V，Tj≤175℃



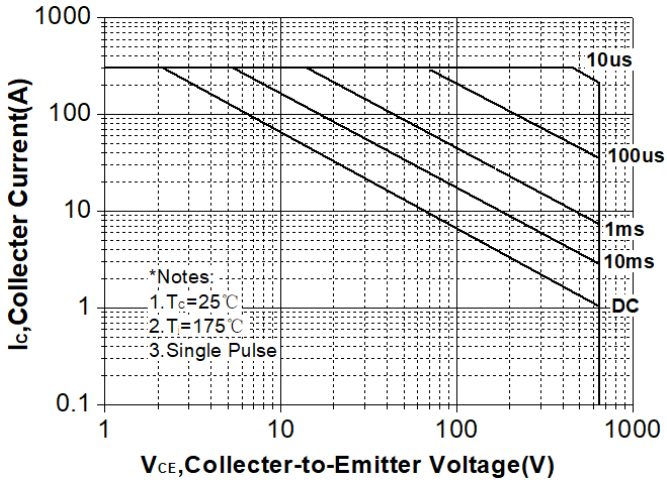
Gate Charge Characteristics

VGE=15V, IC=75A

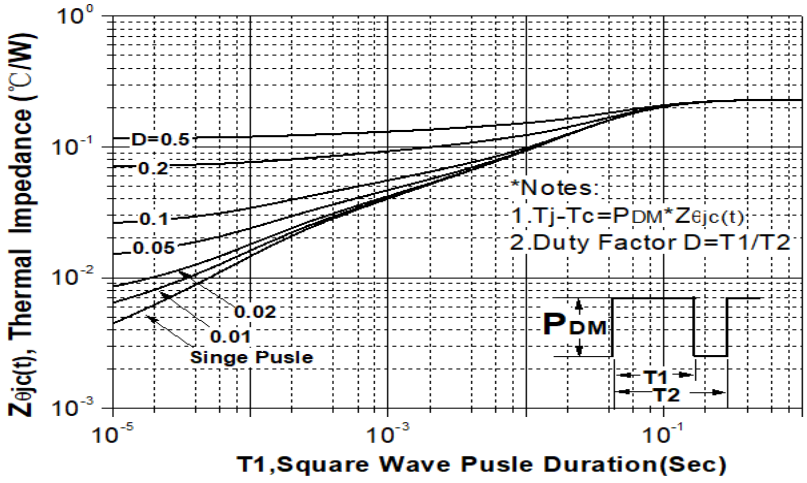


Safe Operating Area For TO-247

Tc=25℃, VGE=15V，Tj≤175℃



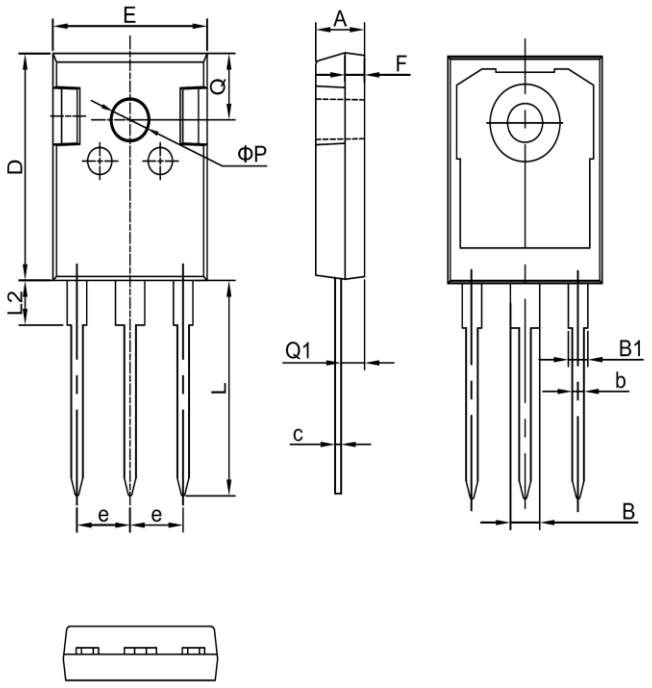
Transient Thermal Impedance for TO-247



外形尺寸 **PACKAGE MECHANICAL DATA**

TO-247

单位 Unit：mm



符号 symbol	MIN	MAX
A	4.90	5.10
B	2.95	3.35
B1	1.95	2.35
b	1.15	1.35
c	0.50	0.70
D	20.90	21.10
E	15.70	15.90
e	5.34	5.54
F	1.90	2.10
L	19.40	20.40
L2	4.03	4.23
Q	6.00	6.40
Q1	2.30	2.50
P	3.50	3.70

注意事项

1.吉林华微电子股份有限公司的产品销售分为直销和销售代理，无论哪种方式，订货时请与公司核实。

2.购买时请认清公司商标，如有疑问请与公司本部联系。

3.在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。

4.本说明书如有版本变更不另外告知

NOTE

1. Jilin Sino-microelectronics co., Ltd sales its product either through direct sales or sales agent , thus, for customers, when ordering , please check with our company.
2. We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.
3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this specification sheet and is subject to change without prior notice.

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