



JT075N065WED

主要参数 MAIN CHARACTERISTICS

I _c	75A
V _{CEs}	650V
V _{cesat-typ} (@V _{ge} =15V)	1.75V

用途

- 逆变器
- UPS 电源

APPLICATIONS

- General purpose inverters
- UPS

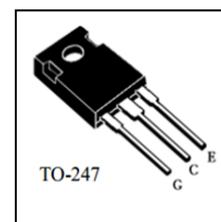
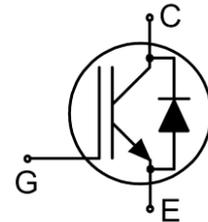
产品特性

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

FEATURES

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

封装 Package



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-Emmitter Voltage	V_{CES}	650	V
*连续集电极电流 Collector Current-continuous	I_C T=25℃ T=100℃	150	A
		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-Emmitter 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-Emmitter Voltage	BV_{CES}	$I_C=250\mu A, V_{GE}=0V$	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 $25^\circ C$	-	0.6	-	V/ $^\circ C$
零栅压下集电极漏电流 Zero Gate Voltage Collector Current	I_{CES}	$V_{CE}=650V, V_{GE}=0V, T_C=25^\circ C$	-	-	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	$V_{GE(th)}$	$V_{CE} = V_{GE}, I_C=250\mu A$	4.5	-	6.5	V
饱和压降 Collector-Emmitter saturation Voltage	V_{CESAT}	$V_{GE}=15V, I_C=75A, T_C=25^\circ C$	-	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	Q_g	$V_{CC}=520V, I_C=75A, R_G=7.9\Omega, V_{GE}=15V, T_C=25^\circ C$	-	27.4	-	nC
栅极-发射极 Gate to emitter charge	Q_{ge}		-	6.5	-	
栅极-集电极 Gate to collector charge	Q_{gc}		-	11.9	-	
栅极电阻-Gate resistance	R_g	$f=1 MHz, \text{open collector}$	-	3.2	-	Ω
短路电流-short current	I_{sc}	$V_{GE}=15V, V_{CE}=300V, t_{sc} < 5\mu s$	-	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	$t_d(\text{on})$	$V_{CC}=400V, I_c=75A, R_G=7.9\Omega$ $V_{GE}=15V$ $T_C=25^\circ C$	-	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	$t_d(\text{off})$		-	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}	$V_{GE}=0V, V_R=200V, I_F=75A$ $di_F/dt=200A/\mu s$ (note 4) $T_C=25^\circ C$	-	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}	$V_{GE}=0V, V_R=200V, I_F=75A$ $di_F/dt=200A/\mu s$ (note 4) $T_C=150^\circ C$	-	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	单 位 Unit
		JT075N065WED	
结到管壳的热阻 Thermal Resistance, Junction to Case	$R_{th(j-c)}$	0.232	$^\circ C/W$
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	33	$^\circ C/W$

注释:

- 1: 脉冲宽度由最高结温限制
- 2: 脉冲测试: 脉冲宽度 $\leq 300\mu s$, 占空比 $\leq 2\%$
- 3: 基本与工作温度无关

Notes:

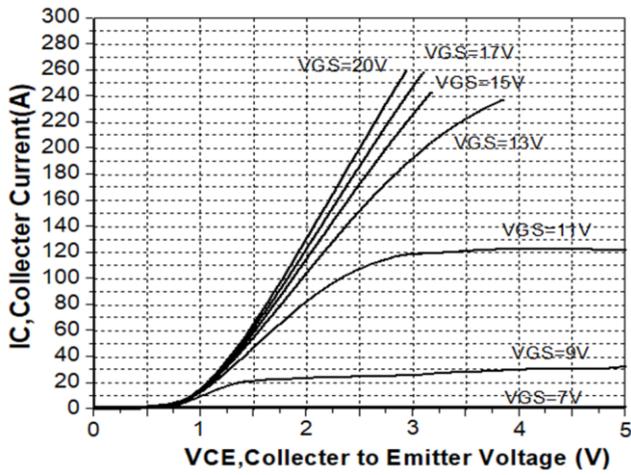
- 1: Pulse width limited by maximum junction temperature
- 2: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- 3: Essentially independent of operating temperature



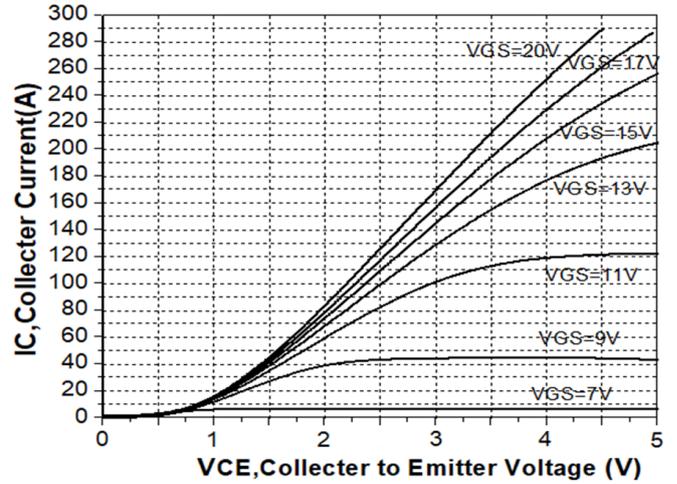


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

Output Characteristics (25°C)

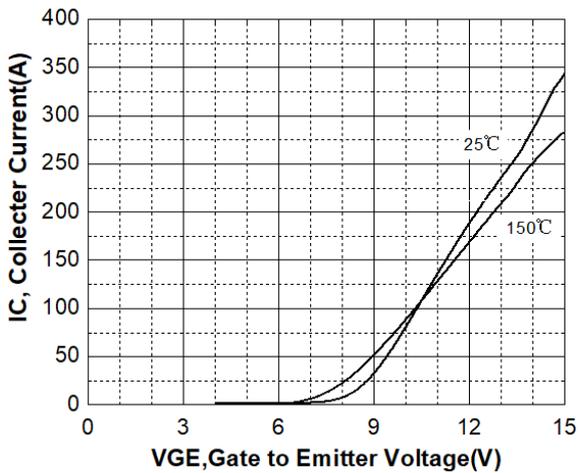


Output Characteristics (150°C)



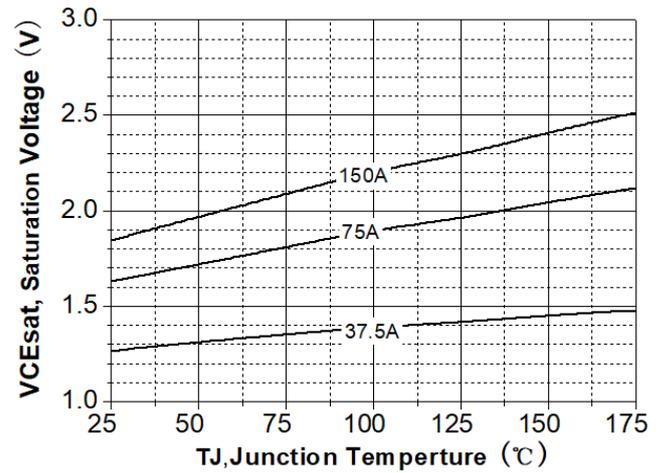
Transfer Characteristics

Vce=20 V



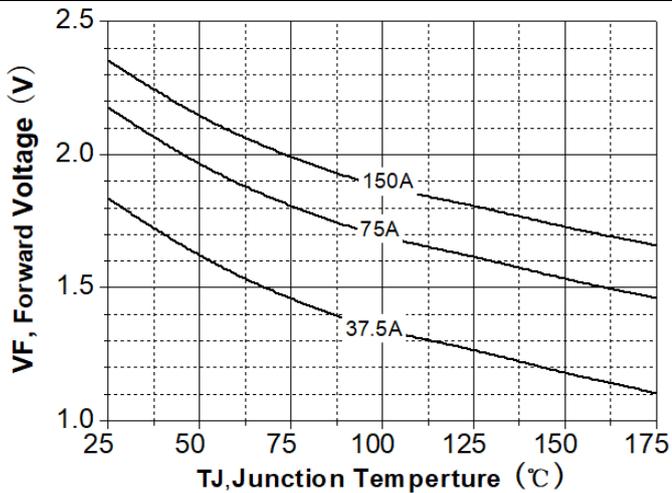
Vcesat vs. Tj

Vge=15V, Ic=37.5A, 75A, 150A



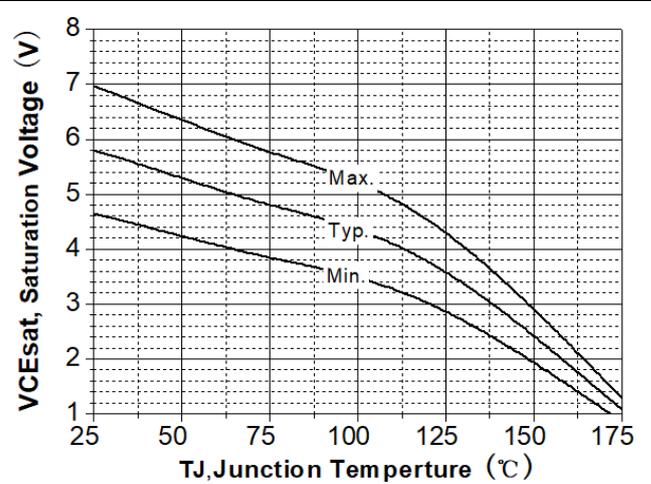
VF vs. Tj

Vge=15V, Ic=37.5A, 75A, 150A



VTH vs. Tj

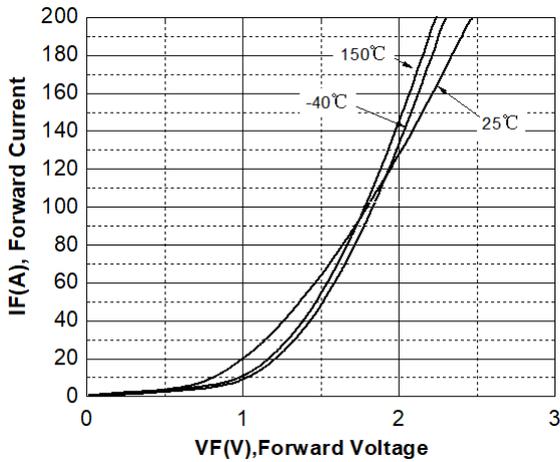
Ic=250uA





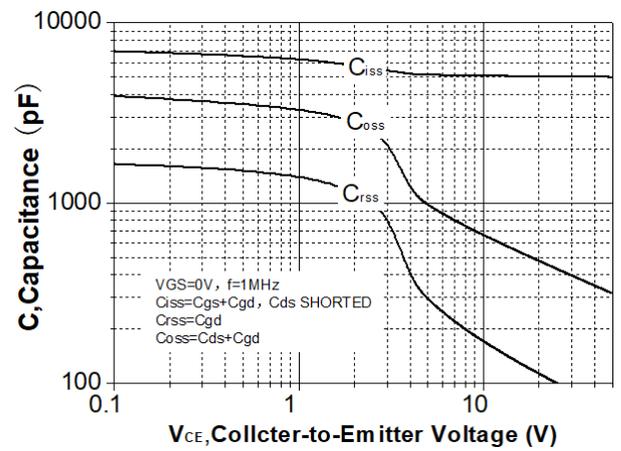
Diode Characteristic

T_j=25°C、150°C、-40°C



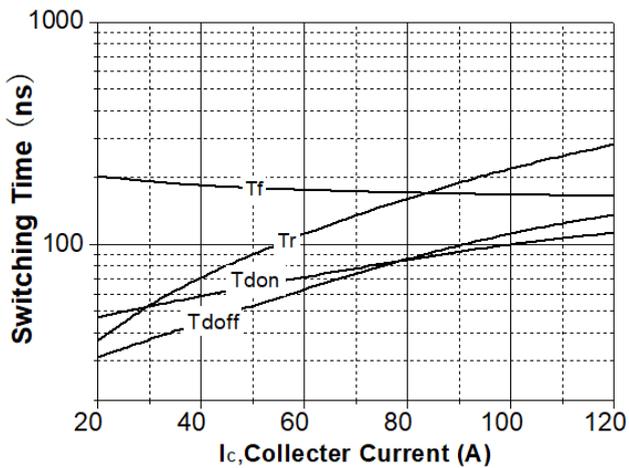
Capacitance Characteristic

V_{ce}=25V, V_{GE}=0V, f=1.0MHz



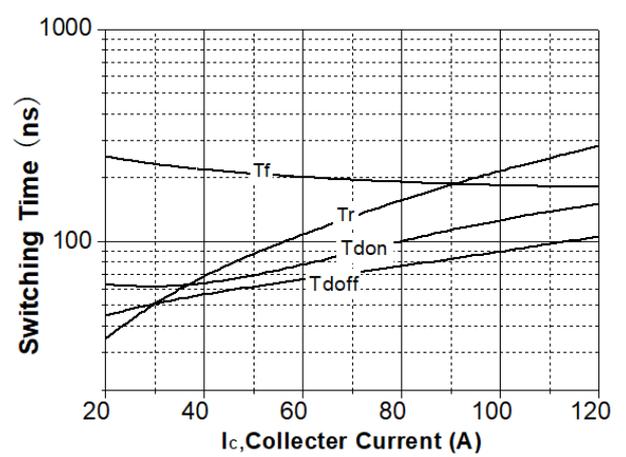
Switching Time vs. IC(25°C)

V_{CE}=400V, V_{GE}=15V, R_G=7.9Ω



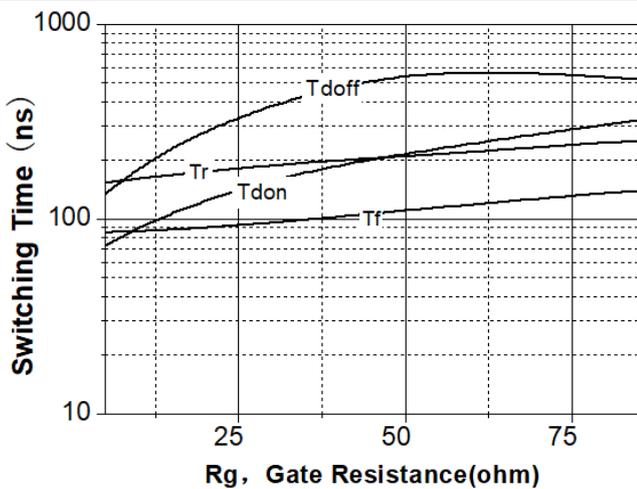
Switching Time vs. IC(150°C)

V_{CE}=400V, V_{GE}=15V, R_G=7.9Ω



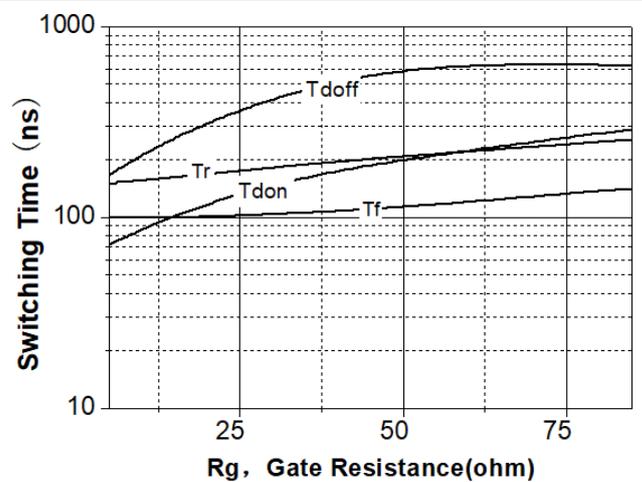
Switching Time vs. Rg(25°C)

V_{GE}=15V, V_{CE}=400V, I_C: 75A



Switching Time vs. Rg(150°C)

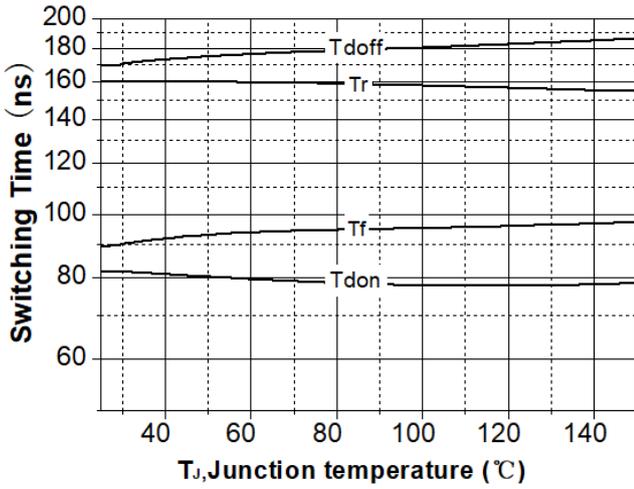
V_{GE}=15V, V_{CE}=400V, I_C: 75A





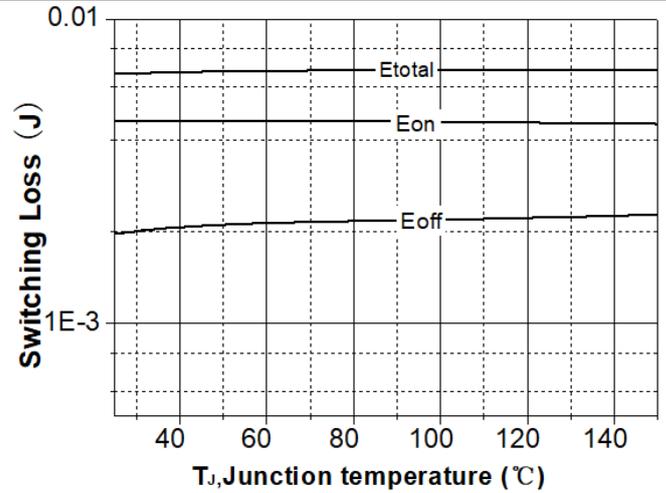
Switching Time vs.Tj

VGE=15V, VCE=400V, IC:75A, Rg=7.9Ω



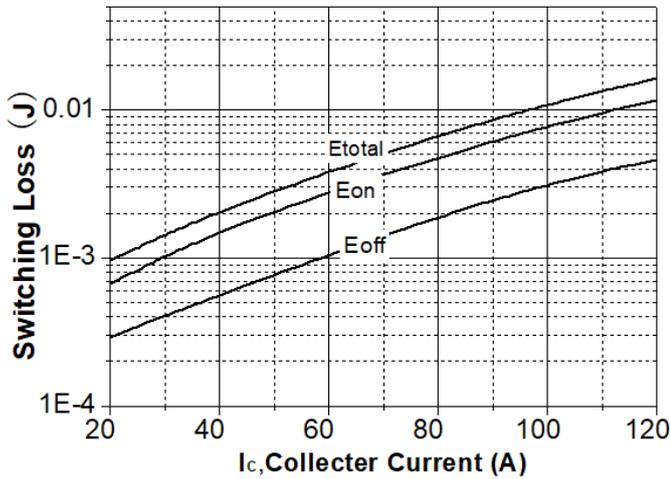
Switching Loss vs. Tj

VGE=15V, VCE=400V, IC:75A, Rg=7.9Ω



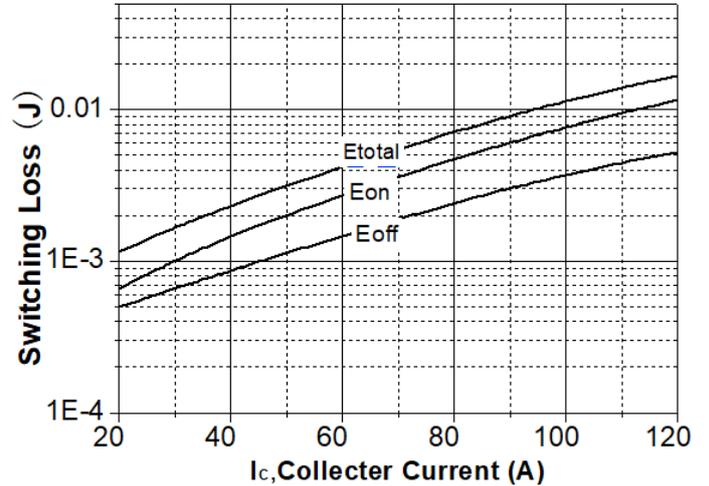
Switching Loss vs. IC(25°C)

VGE=15V, VCE=400V, Rg=7.9Ω



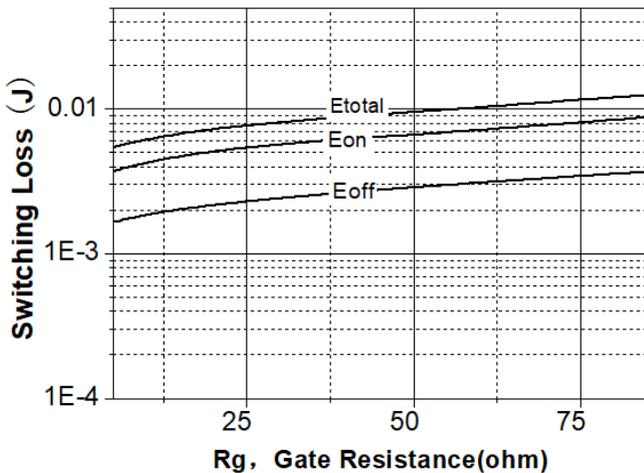
Switching Loss vs. IC(150°C)

VGE=15V, VCE=400V, Rg=7.9Ω



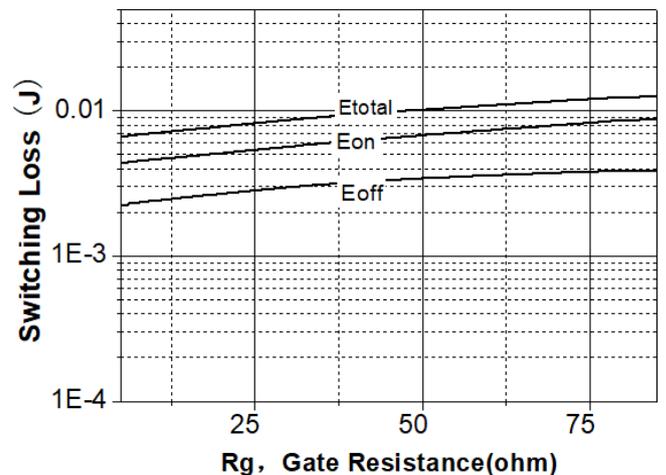
Switching Loss vs. Rg(25°C)

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



Switching Loss vs. Rg(150°C)

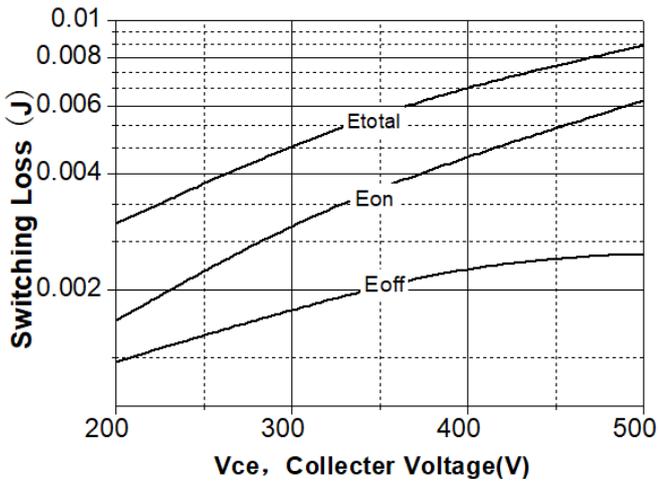
VGE=15V, VCE=400V, IC:75A





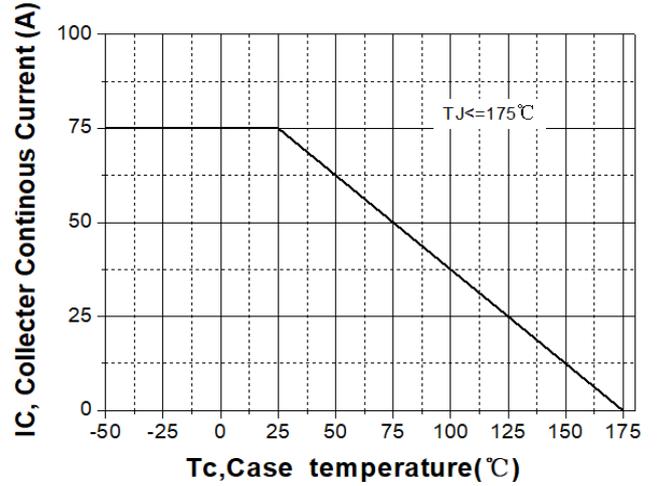
Switching Loss vs. VCE(150°C)

VGE=15V, IC=75A, Rg=7.9Ω



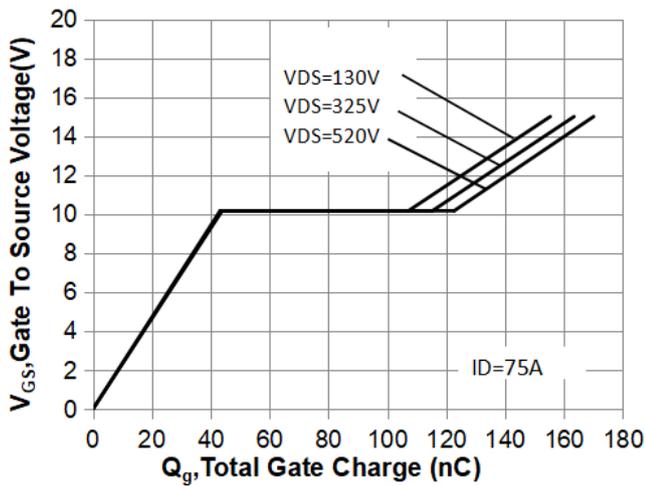
Collector current vs. case temperature

VGE ≥ 15V, Tj ≤ 175°C



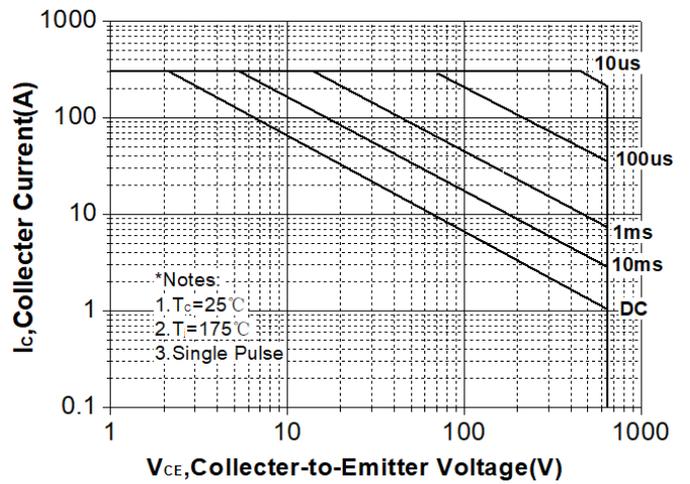
Gate Charge Characteristics

VGE=15V, IC=75A

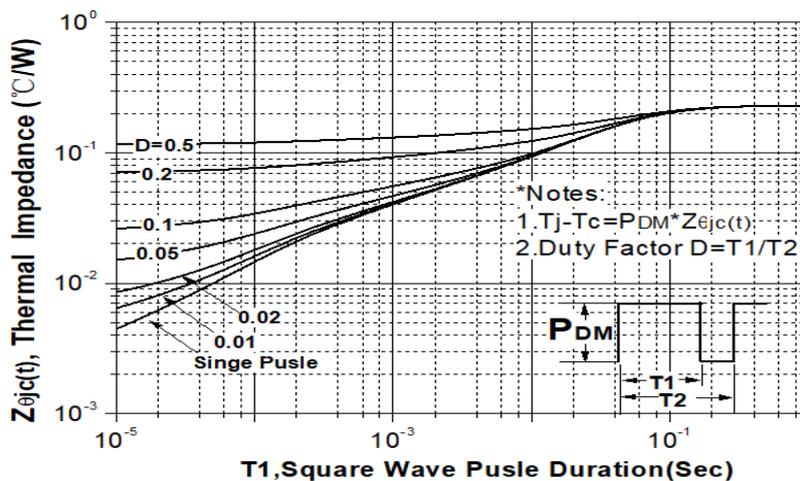


Safe Operating Area For TO-247

Tc=25°C, VGE=15V, Tj ≤ 175°C



Transient Thermal Impedance for TO-247

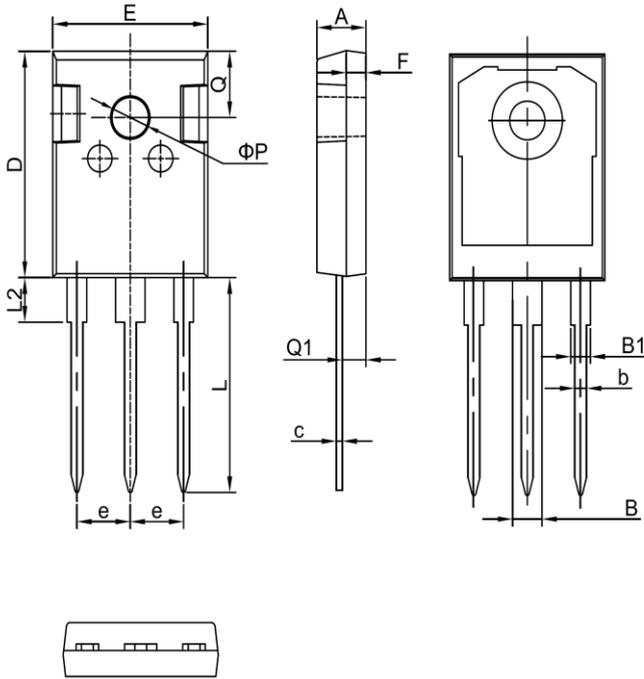




外形尺寸 PACKAGE MECHANICAL DATA

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



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