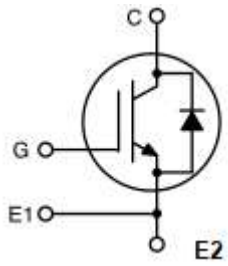
JT075N065GHED

主要参数 MAIN CHARACTERISTICS

I_C	75A
V_{CE}	650V
$V_{cesat-typ}$	1.7V

封装 **Package**



E1: Kelvin Emitter
E2: Power Emitter

TO-247-4L

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
- ●RoHS 产品

FEATURES

- ●Low gate charge
- ●Trench FS Technology
- ●RoHS product

订货信息 ORDER MESSAGE

订 货 型 号 Order codes	印 记 Marking	封 装 Package
无卤-条管 Halogen-Free-Tube		
JT075N065GHED-GH-BR	JT075N065GHED	TO-247-4L

绝对最大额定值 **ABSOLUTE RATINGS** (Tc=25℃)

项　目 **Parameter**	符　号 **Symbol**	数　值 **Value**	单　位 **Unit**
最高集电极－发射极直流电压 Collector-emitter voltage	V_{CE}	650	V
*连续集电极电流 Collector current-continuous	I_C	150(T_C=25°C)	A
		75(T_C=100°C)	A
最大脉冲集电极极电流（注 1） Collector current – pulse（note 1）	I_{CM}	300	A
二极管正向测试电流 Diode RMS forward current	I_F	150(T_C=25°C)	A
		75 (T_C=100°C)	A
二极管正向不重复峰值电流（浪涌电流） Surge non repetitive forward current tp= 10 ms sinusoidal	I_{FSM}	300	A
最高栅极发射极电压 Gate-emitter voltage	V_{GE}	±20	V
安全工作区 Turn-off safe area	-	300	A
耗散功率 Power dissipation	P_D　T_C=25℃	520	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-emitter 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-emitter saturation voltage	V_{CESAT}	V_{GE}=15V　I_C=75A Tc=25℃	-	1.7	2.4	V
动态特性 Dynamic Characteristics						
输入电容 Input capacitance	C_{ies}	V_{CE}=25V, V_{GE}=0V, f=1.0MH$_Z$	-	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,V_{GE}=15 V T_C=25℃	-	170	-	nC
栅极-反射极 Gate to emitter charge	Qge		-	43	-	
栅极-集电极 Gate to collector charge	Qgc		-	78	-	
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≤10μs	-	310	-	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=10Ω V_{GE}=15 V T_C=25℃	-	88	-	ns
上升时间 Turn-on rise time	t_r		-	150	-	ns
关断延迟时间 Turn-off delay time	t_d(off)		-	168	-	ns
下降时间 Turn-off fall time	t_f		-	98	-	ns
开通损耗 Turn-on energy	Eon		-	1.3	-	mJ
关断损耗 Turn-off energy	Eoff		-	1.8	-	mJ
总开关损耗 Total switching energy	Etot		-	3.1	-	mJ
开启延迟时间 Turn-on delay time	t_d(on)	V_{CC}=400V,I_c=75A,R_G=10Ω V_{GE}=15 V T_C=150℃	-	82	-	ns
上升时间 Turn-on rise time	t_r		-	155	-	ns
关断延迟时间 Turn-off delay time	t_d(off)		-	190	-	ns
下降时间 Turn-off fall time	t_f		-	99	-	ns
开通损耗 Turn-on energy	Eon		-	2.5	-	mJ
关断损耗 Turn-off energy	Eoff		-	2.2	-	mJ
总开关损耗 Total switching energy	Etot		-	4.7	-	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 Diode forward voltage	V_F	V_{GE}=0V, I_F=75A	-	2.2	2.7	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 T_C=25℃	-	24.5	-	ns
反向恢复电荷 Diode reverse recovery charge	Q_{rr}		-	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 T_C=150℃	-	195	-	ns
反向恢复电荷 Diode reverse recovery charge	Q_{rr}		-	731	-	nC
反向恢复电流 Diode reverse recovery current	I_{rrm}		-	8.3	-	A

项　　目 **Parameter**	符　号 **Symbol**	**Max**	单 位 **Unit**
结到管壳的热阻 Thermal Resistance, Junction to case IGBT	$R_{th(j-c)}$	0.24	℃/W
结到管壳的热阻 Thermal Resistance, Junction to case diode	$R_{th(j-c)}$	0.38	℃/W
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	33	℃/W

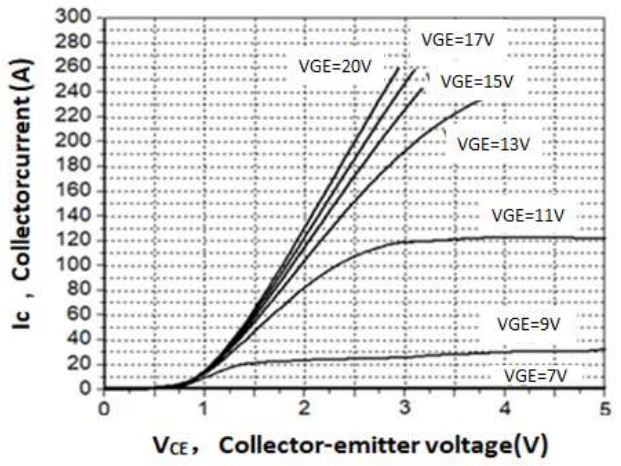
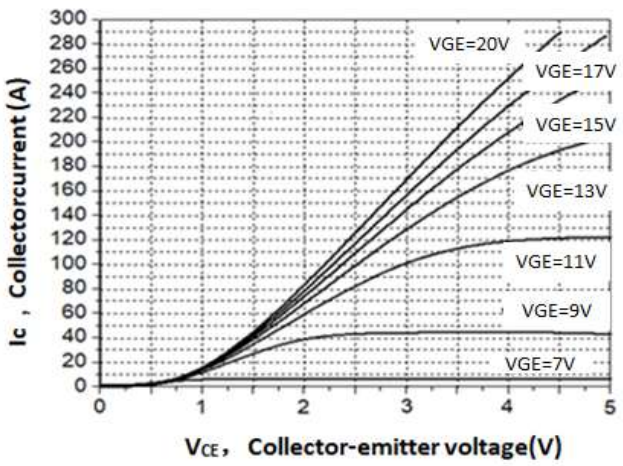
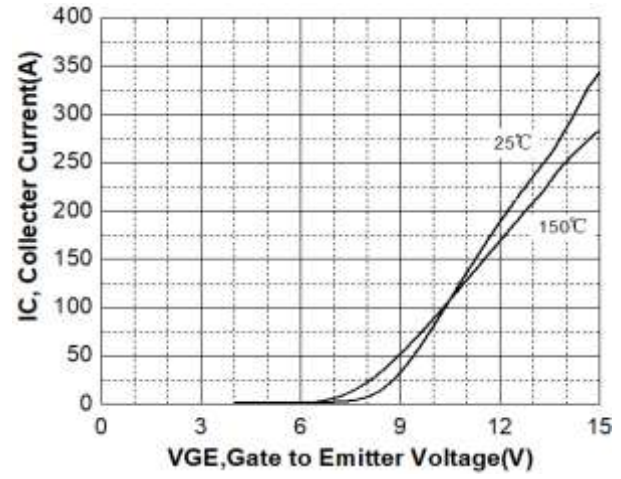
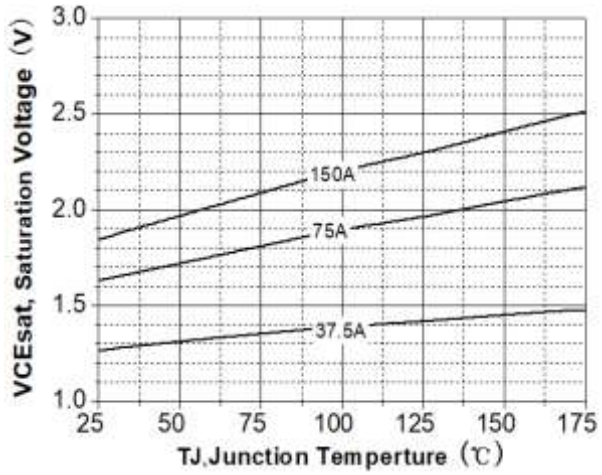
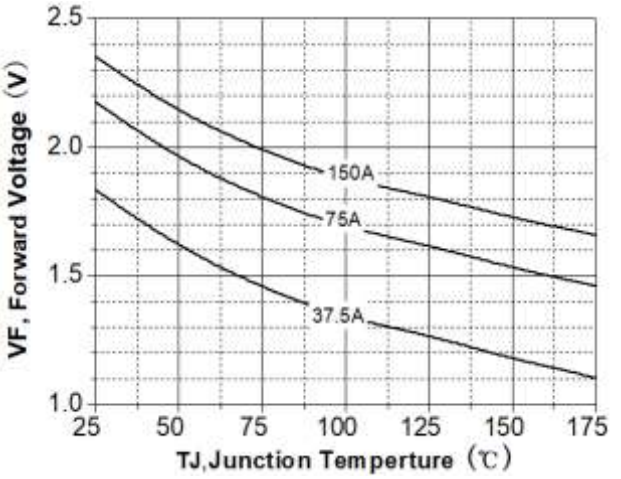
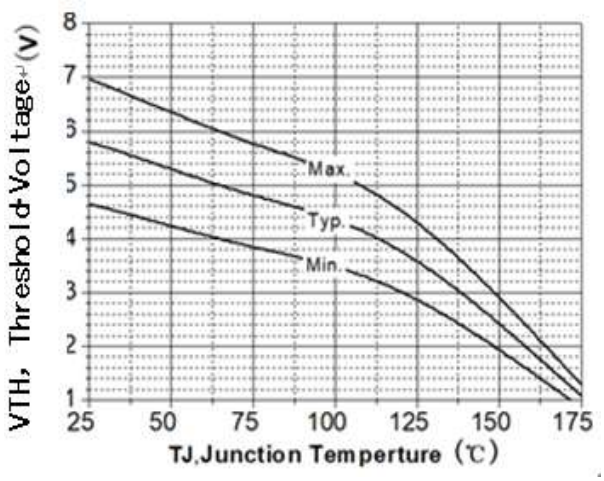
注释：

1：脉冲宽度由最高结温限制

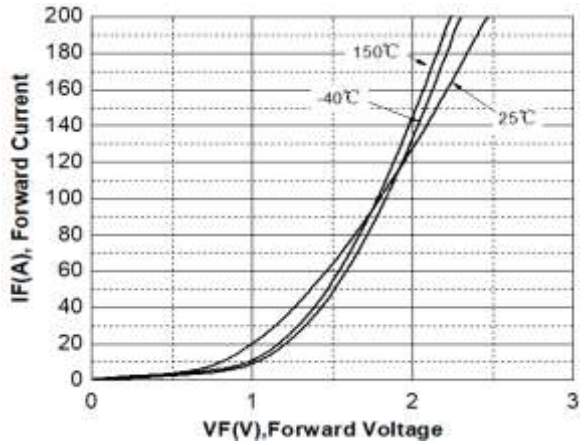
Notes:

1：Pulse width limited by maximum junction temperature

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

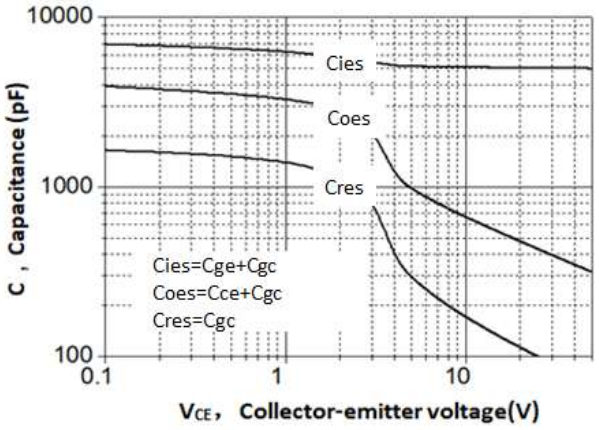
Output Characteristics（25℃）	Output Characteristics（150℃）
	
Transfer Characteristics	**Vcesat vs. Tj**
	
VF vs. Tj	**VTH vs. Tj**
	

Diode Characteristic



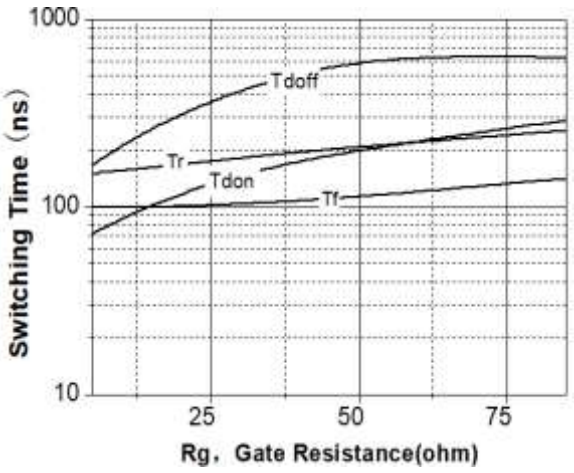
Capacitance Characteristic

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



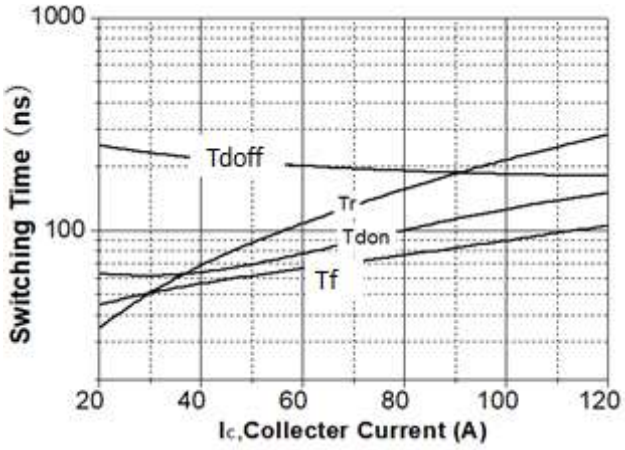
Switching Time vs. Rg(150℃)

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



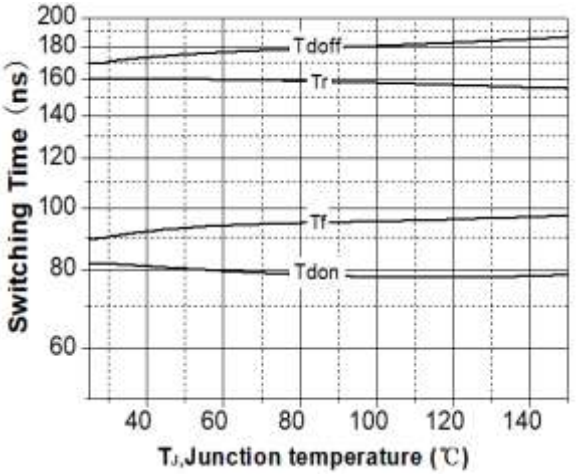
Switching Time vs. IC(150℃)

VCE=400V,VGE=15V, RG=10Ω



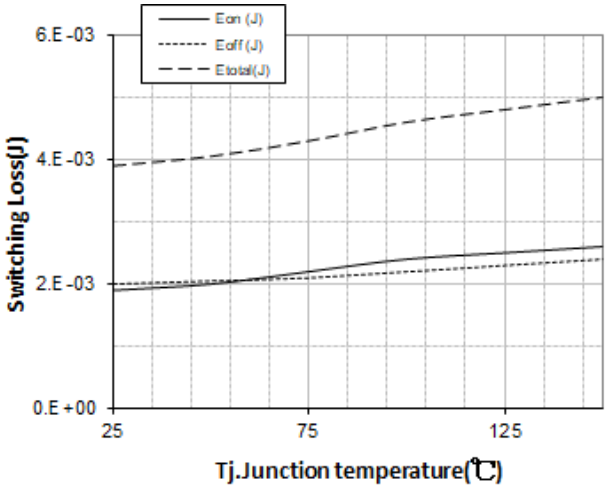
Switching Time vs.Tj

VGE=15V,VCE=400V,IC=75A, RG =10Ω



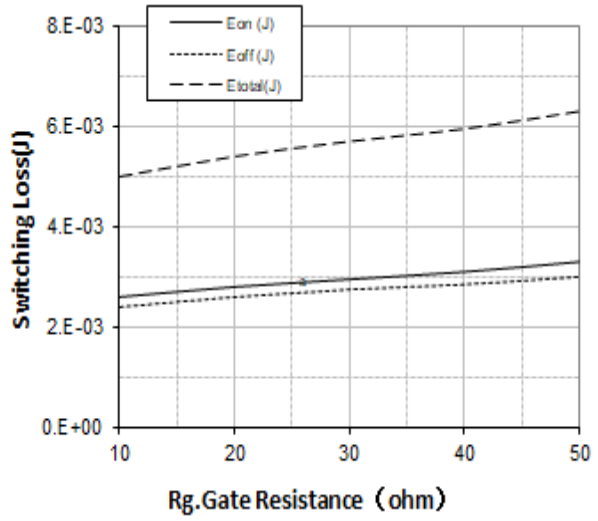
Switching Loss vs. Tj

VGE=15V,VCE=400V,IC=75A , RG =10Ω



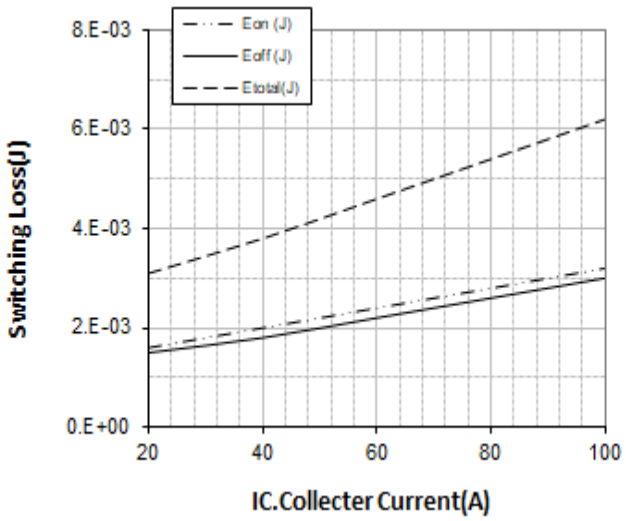
Switching Loss vs. Rg(150℃)

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



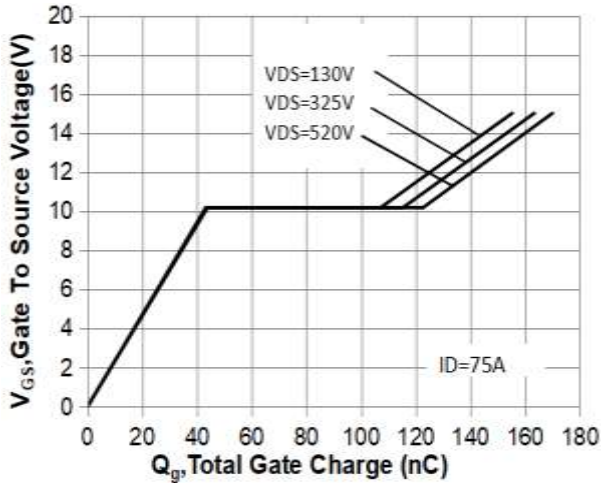
Switching Loss vs. IC(150℃)

VGE=15V,VCE=400V, RG =10Ω



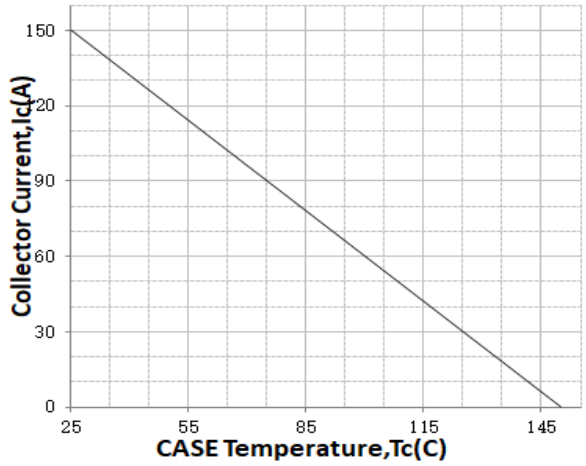
Gate Charge Characteristics

VGE=15V, IC=75A

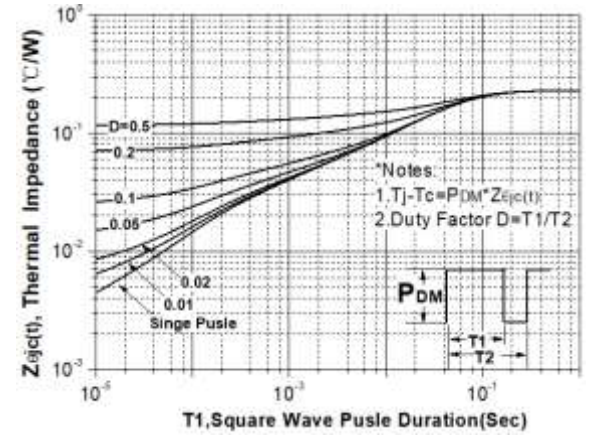


Colletcor current vs.case temperature

VGE=15V，Tj≤150℃

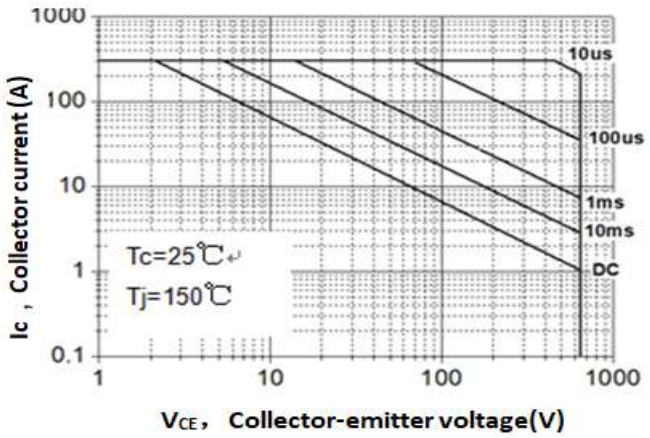


Transient Thermal Impedance for TO-247



Safe Operating Area For TO-247

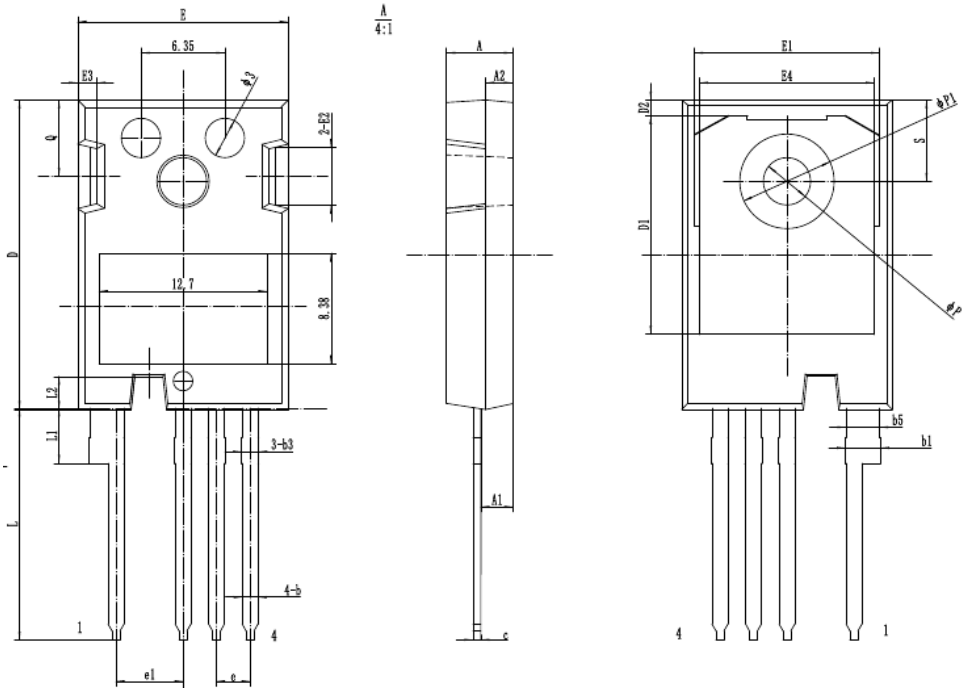
Tc=25°C, VGE=15V，Tj≤150℃



外形尺寸 **PACKAGE MECHANICAL DATA**

TO-247-4L

单位 Unit：mm



SYMBOL	mm		
	MIN	NOM	MAX
*A	4.83	5.02	5.21
A1	2.29	2.41	2.54
A2	1.91	2.00	2.16
*b	1.07	1.20	1.33
b1	2.39	2.67	2.94
b3	1.07	1.30	1.60
b5	2.39	2.53	2.69
*c	0.55	0.60	0.68
*D	23.30	23.45	23.60
D1	16.25	16.55	17.65
D2	0.95	1.19	1.25
*E	15.75	15.94	16.13
E1	13.10	14.02	14.15
E2	3.68	4.40	5.10
E3	1.00	1.45	1.90
E4	12.38	13.26	13.43
*e		2.54BSC	
e1		5.08BSC	
*L	17.31	17.57	17.82
*L1	3.97	4.19	4.37
*L2	2.30	2.50	2.65
*ΦP	3.51	3.61	3.65
*ΦP1		7.19REF	
*Q	5.49	5.79	6.00
S	6.04	6.17	6.30

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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联系方式

吉林华微电子股份有限公司
公司地址：吉林省吉林市深圳街 99 号
邮编：132013
总机：86-432-64678411
传真：86-432-64665812
网址：www.hwdz.com.cn

CONTACT

JILIN SINO-MICROELECTRONICS CO., LTD.
ADD: No.99 Shenzhen Street, Jilin City, Jilin Province, China.
Post Code: 132013
Tel： 86-432-64678411
Fax：86-432-64665812
Web Site：www.hwdz.com.cn