



JT050N036FA/ABA

主要参数 MAIN CHARACTERISTICS

Ic	50 A
Vces	360 V
Vcesat (@Vge=15V)	1.6V

用途

- 逆变器
- PDP
- UPS 电源

APPLICATIONS

- General purpose inverters
- PDP
- UPS

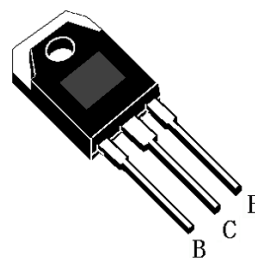
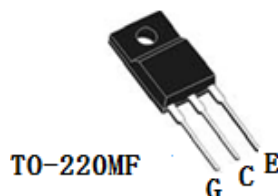
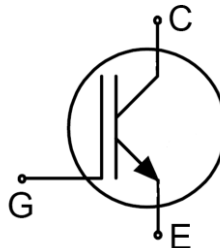
产品特性

- 低栅极电荷
- PT 技术,
- 通态压降, VCE(sat), typ
= 1.6V @ IC = 50A
and TC = 25°C
- RoHS 产品

FEATURES

- Low gate charge
- PT Technology,
- saturation voltage:
VCE(sat), typ = 1.6V @
IC = 50A and TC = 25°C
- RoHS product

封装 Package



TO-3PB

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 Non halogen-Tube	有卤-编带 Halogen-Reel	无卤-编带 Non halogen-Reel		
JT050N036FA-F-B	JT050N036FA-F-BR	N/A	N/A	JT050N036FA	TO-220MF
JT050N036ABA-GD-B	N/A	N/A	N/A	JT050N036ABA	TO-3PB





绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value		单 位 Unit
		JT050N036FA	JT050N036ABA	
最高集电极—发射极直流电压 Collector-Emmitter Voltage	V_{CES}	360		V
*连续集电极电流 Drain Current-continuous	I_C $T=25^{\circ}\text{C}$	100		A
	$T=100^{\circ}\text{C}$	50		A
最大脉冲集电极极电流（注1） Collector Current – pulse (note 1)	I_{CM}	240		A
最高栅极发射极电压 Gate-Emmitter Voltage	V_{GES}	± 30		V
Turn-off safe area	-	200		A
耗散功率 Power Dissipation	P_D $T_C=25^{\circ}\text{C}$	30	312	W
最高结温及存储温度 Operating and Storage Temperature Range	T_J, T_{STG}	$-55 \sim +150$		$^{\circ}\text{C}$
引线最高焊接温度 Maximum Lead Temperature for Soldering Purposes	T_L	300		$^{\circ}\text{C}$

*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 =500μA, V _{GS} =0V	360	-	-	V
击穿电压温度特性 Breakdown Voltage Temperature Coefficient	ΔBV _{CES} /ΔT _J	I _C =1mA, referenced to 25℃	-	0.5	-	V/℃
零栅压下集电极漏电流 Zero Gate Voltage Collector Current	I _{CES}	V _{CE} =360V, V _{GE} =0V, T _C =25℃	-	-	10	μ A
正向栅极体漏电流 Gate-body leakage current, forward	I _{GESF}	V _{CE} =0V, V _{GE} =30V	-	-	400	nA
反向栅极体漏电流 Gate-body leakage current, reverse	I _{GESR}	V _{CE} =0V, V _{GE} =-30V	-	-	-400	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	-	5.5	V
饱和压降 Collector-Emmitter saturation Voltage	V _{CESAT}	V _{GE} =15V IC=35A T _c =25℃	-	1.4	1.6	V
		V _{GE} =15V IC=50A T _c =25℃	-	1.6	1.8	V
动态特性 Dynamic Characteristics						
输入电容 Input capacitance	C _{iss}	V _{CE} =25V, V _{GE} =0V, f=1.0MHz _Z	-	1500	-	pF
输出电容 Output capacitance	C _{oss}		-	100	-	pF
反向传输电容 Reverse transfer capacitance	C _{rss}		-	50	-	pF





电特性 ELECTRICAL CHARACTERISTICS

开关特性 Switching Characteristics

延迟时间 Turn-On delay time	$t_d(\text{on})$	$V_{CE}=200V, I_c=35A, R_G=5\Omega$	-	30		ns
上升时间 Turn-On rise time	t_r	$R_L=4.5\Omega$	-	100		ns
延迟时间 Turn-Off delay time	$t_d(\text{off})$	$T_C=25^\circ\text{C}$	-	100		ns
下降时间 Turn-Off Fall time	t_f		-	150		ns
栅极电荷总量 Total Gate Charge	Q_g	$V_{CE}=150V,$	-	67		nC
栅极-反射极 Gate to emitter charge	Q_{ge}	$I_c=35A$		11.7		
栅极-集电极 Gate to collector charge	Q_{gc}	$V_{GE}=15V$ (note 2, 3)		23.5		

项 目 Parameter	符 号 Symbol	最大 Max		单 位 Unit
		JT050N036FA	JT050N036ABA	
结到管壳的热阻 Thermal Resistance, Junction to Case	$R_{th(j-c)}$	2.6	0.4	$^\circ\text{C/W}$
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	62	40	$^\circ\text{C/W}$

注释:

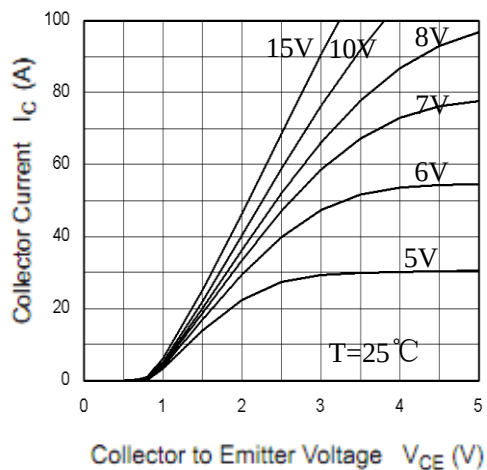
- 1: 脉冲宽度由最高结温限制
- 2: 脉冲测试: 脉冲宽度 $\leq 300\mu\text{s}$, 占空比 $\leq 2\%$
- 3: 基本与工作温度无关

Notes:

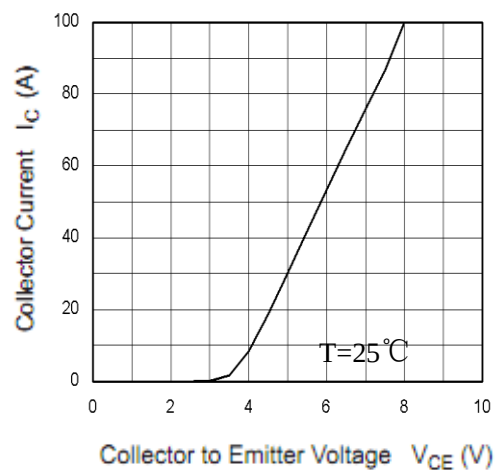
- 1: Pulse width limited by maximum junction temperature
- 2: Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$
- 3: Essentially independent of operating temperature

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

Typical Output Characteristics

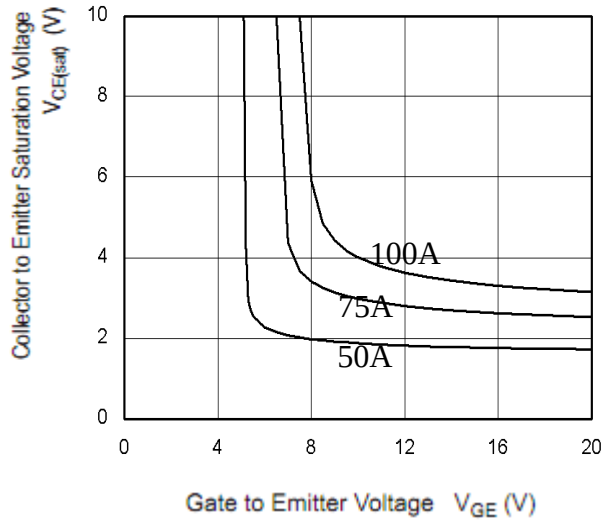


Typical Saturation Voltage Characteristics

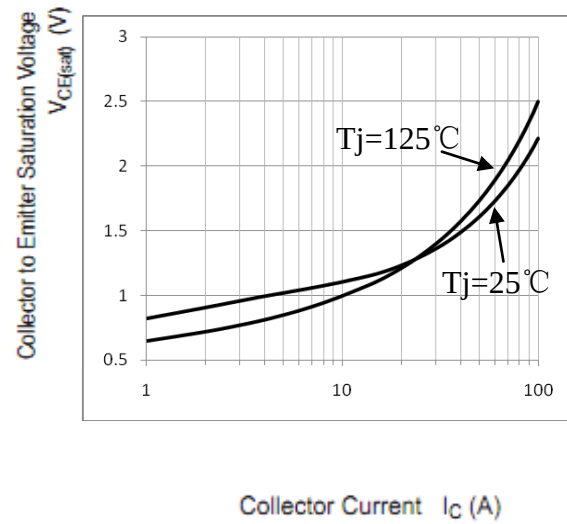




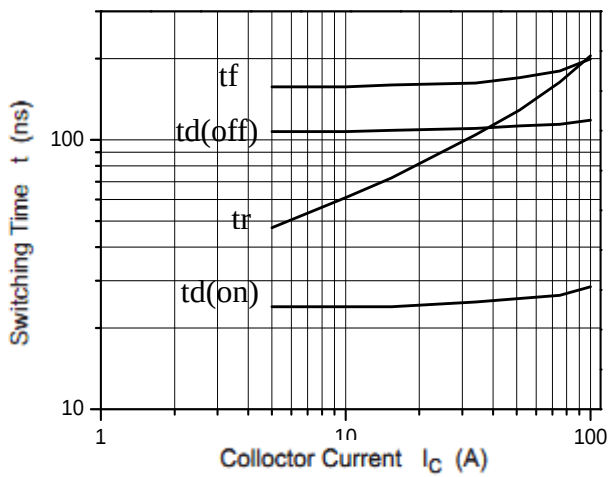
Saturation Voltage vs. VGE



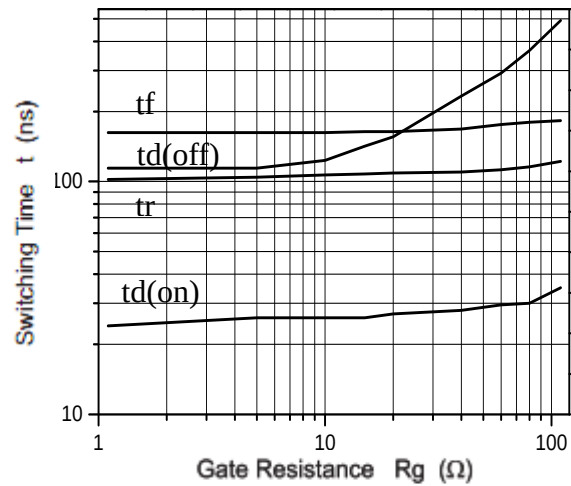
Collector to Emitter Saturation Voltage vs. Collector Current



Switching Loss vs. Collector Current

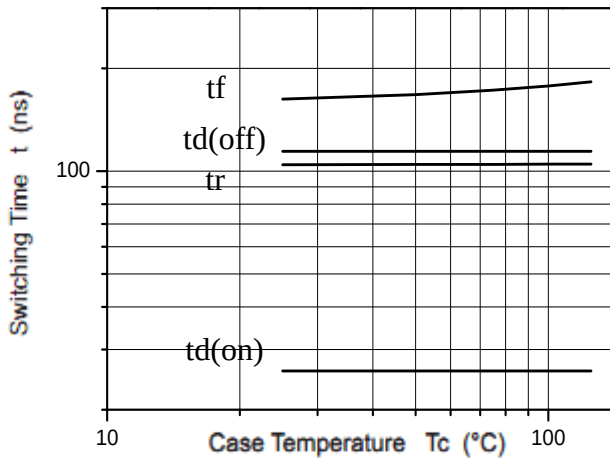


Switching Loss vs. Gate Resistance

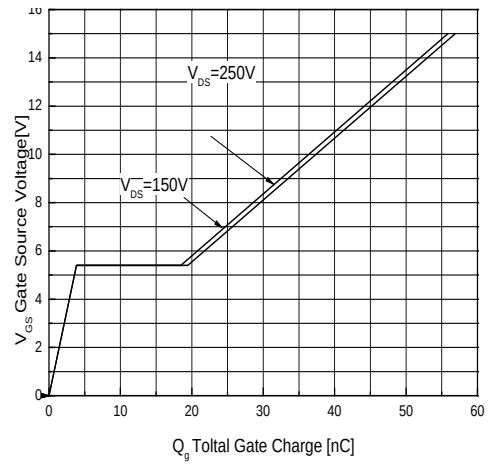




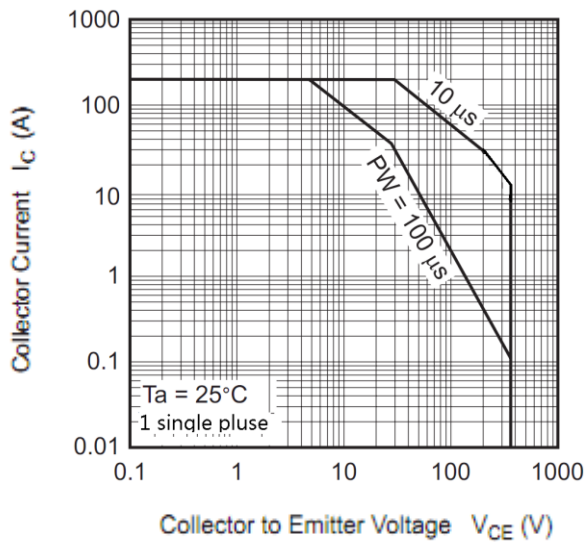
Switching Loss vs. Case Temperature



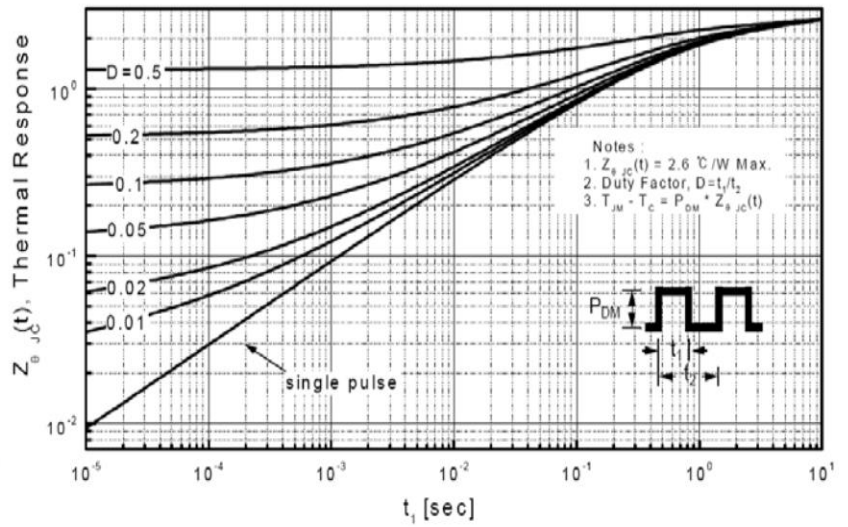
Gate Charge Characteristics



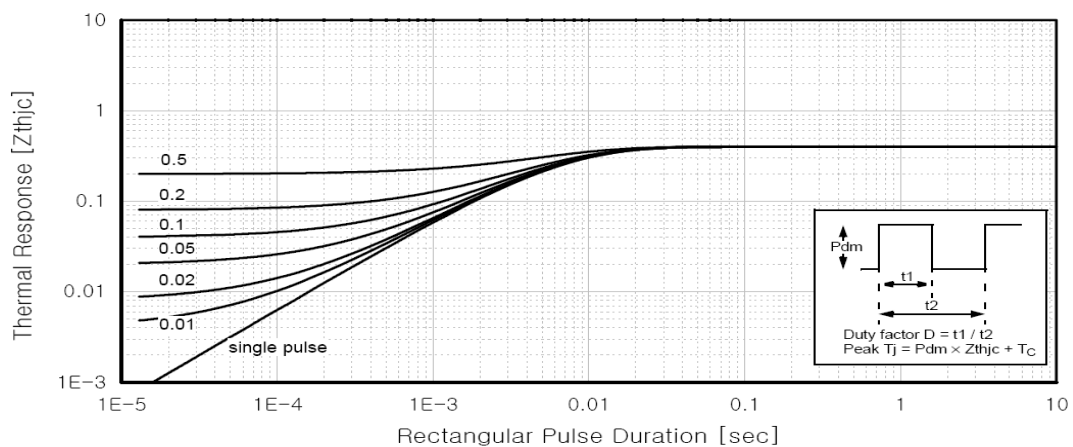
SOA Characteristics



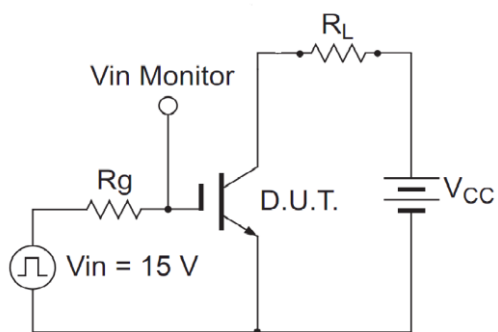
Transient Thermal Impedance For TO-220MF



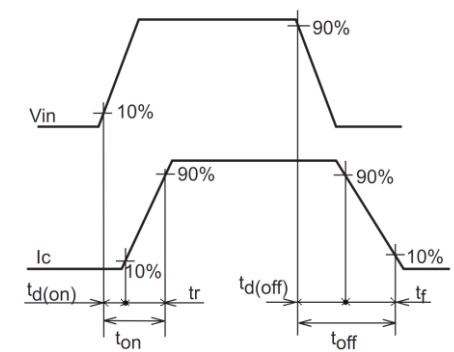
Transient Thermal Impedance For TO-3PB



Switching Time Test Circuit



Waveform

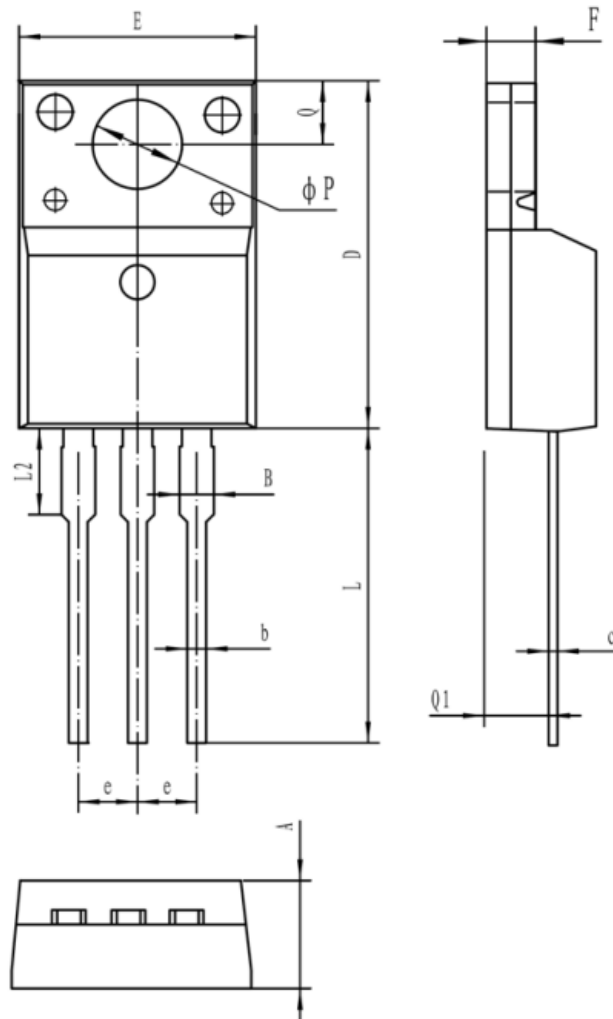




外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF

单位 Unit: mm

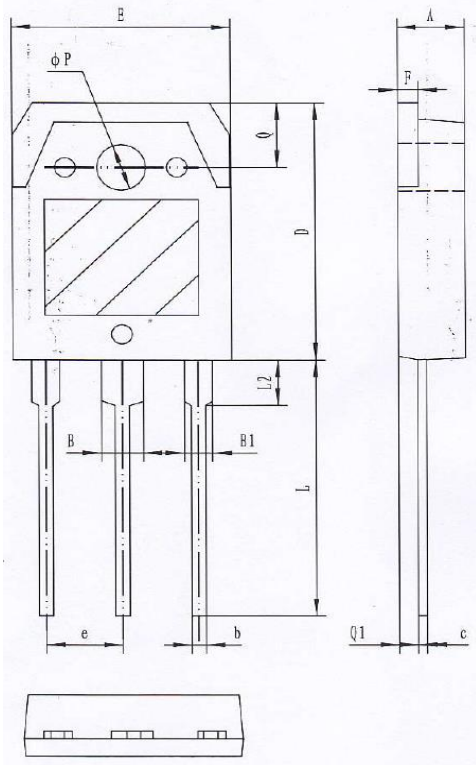


符 号 Symbol	MIN	MAX
A	4.5	4.9
B	-	1.47
b	0.7	0.9
c	0.45	0.6
D	15.67	16.07
E	9.96	10.36
e	2.54TYPE	
F	2.34	2.74
L	12.58	13.38
L2	3.13	3.33
ΦP	3.08	3.28
Q	3.2	3.4
Q1	2.56	2.96





TO-3PB



符号 symbol	MIN	MAX
A	4.60	5.00
B	2.90	3.20
B1	1.90	2.20
b	0.90	1.10
c	0.50	0.70
D	19.40	20.40
E	15.40	15.80
e	5.45(TYP)	
F	1.40	1.60
L	19.50	20.50
L2	3.30	3.70
Q	4.90	5.10
Q1	1.30	1.50
P	3.10	3.50





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