

High Voltage Fast-Switching NPN Power Transistor

FJPF13007

- High Voltage Capability
- High Switching Speed
- Suitable for Electronic Ballast and Switching Mode Power Supply
- This is a Pb-Free Device

MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	8	A
I_{CP}	Collector Current (Pulse)	16	A
I_B	Base Current	4	A
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-65~150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

h_{FE} CLASSIFICATION

Classification	H1	H2
h_{FE1}	15~28	26~39

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	400	—	—	V
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 9 \text{ V}, I_C = 0$	—	—	1	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 5 \text{ V}, I_C = 2 \text{ A}$ $V_{CE} = 5 \text{ V}, I_C = 5 \text{ A}$	8 5	—	60 30	
$V_{CE(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = 2 \text{ A}, I_B = 0.4 \text{ A}$ $I_C = 5 \text{ A}, I_B = 1 \text{ A}$ $I_C = 8 \text{ A}, I_B = 2 \text{ A}$	— — —	— — —	1.0 2.0 3.0	V
$V_{BE(\text{sat})}$	Base-Emitter Saturation Voltage	$I_C = 2 \text{ A}, I_B = 0.4 \text{ A}$ $I_C = 5 \text{ A}, I_B = 1 \text{ A}$	— —	— —	1.2 1.6	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}$	4	—	—	MHz
C_{ob}	Output Capacitance	$V_{CB} = 10 \text{ V}, f = 0.1 \text{ MHz}$	—	110	—	pF
t_{ON}	Turn On Time	$V_{CC} = 125 \text{ V}, I_C = 5 \text{ A}, I_{B1} = -I_{B2} = 1 \text{ A}, R_L = 25 \Omega$	—	—	1.6	μs
t_{STG}	Storage Time		—	—	3.0	μs
t_F	Fall Time		—	—	0.7	μs

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

*Pulse Test: PW $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2\%$



TO-220 Fullpack, 3-Lead
CASE 221AT

MARKING DIAGRAM

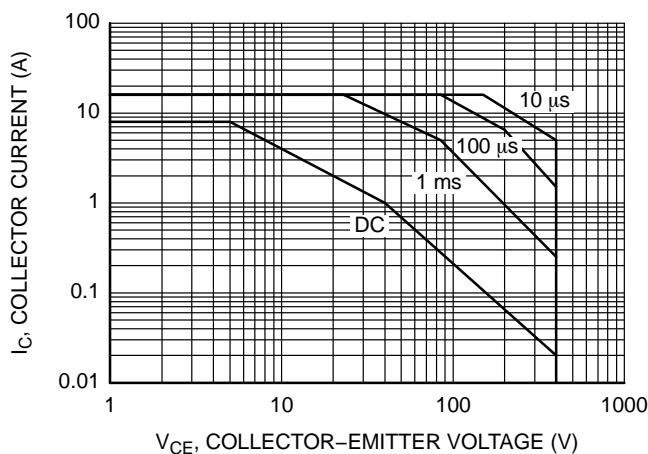
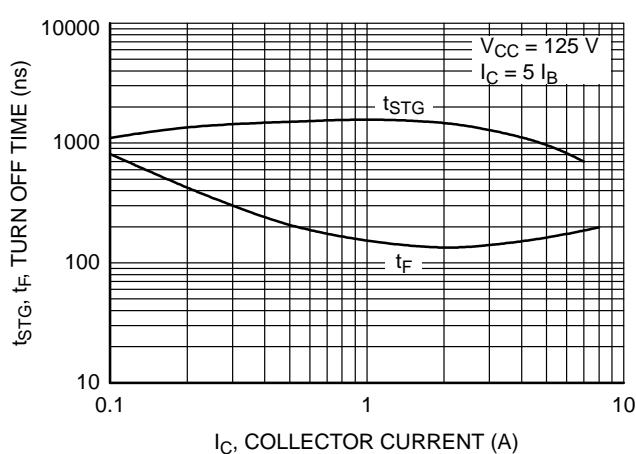
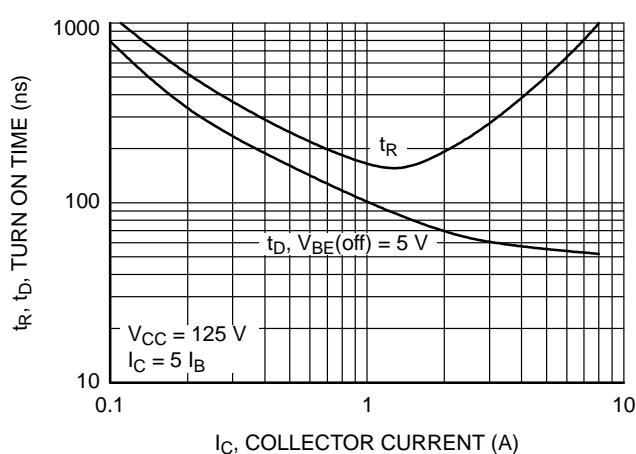
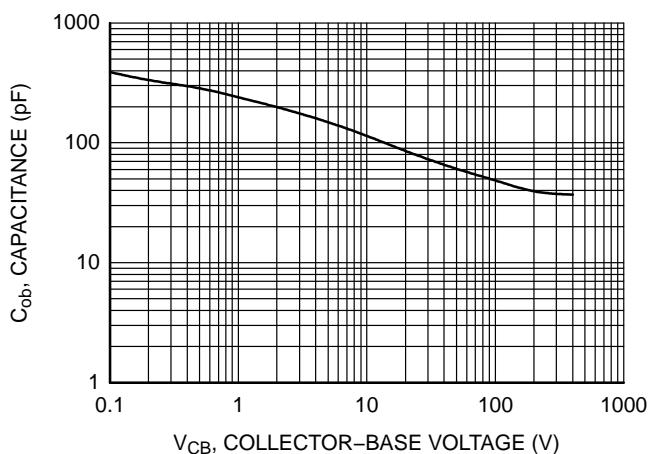
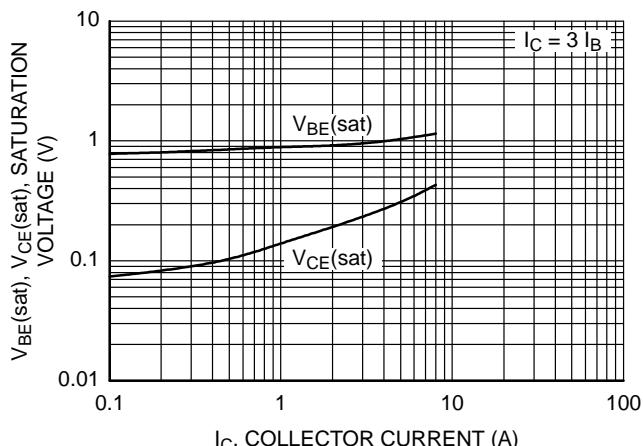
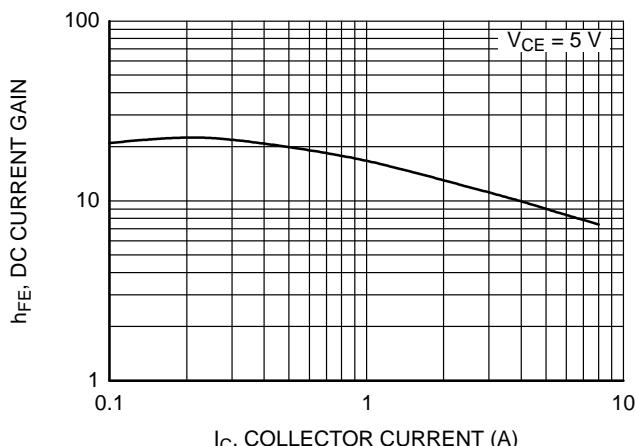
J13007
—x
AYWWZZ

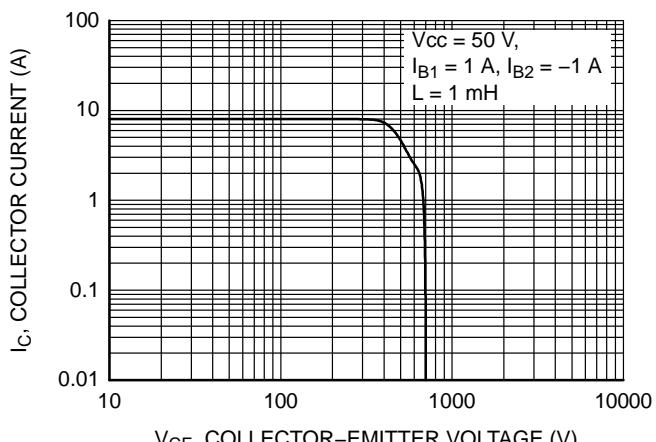
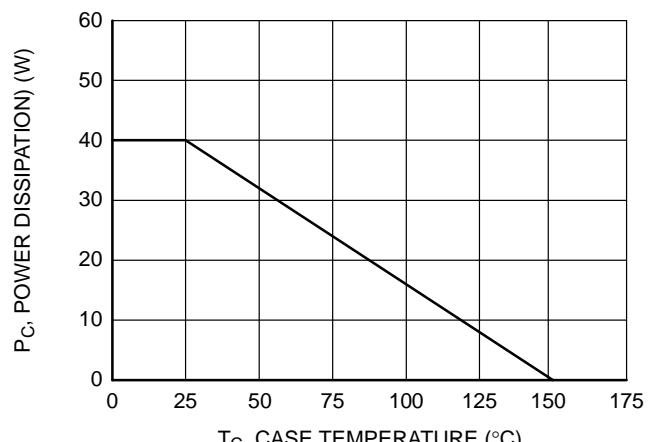
J13007- = Specific Device Code
x = h_{FE} Grade
A = Site Code
Y = Year
WW = Work Week
ZZ = Assembly Lot Code

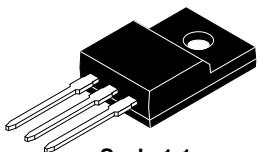
ORDERING INFORMATION

Device	Package	Shipping
FJPF13007H2TU	TO-220 Fullpack	1000 Units / Tube

TYPICAL CHARACTERISTICS

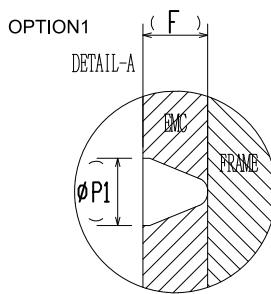
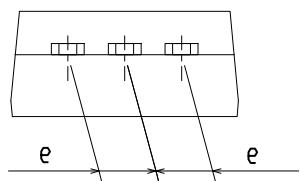
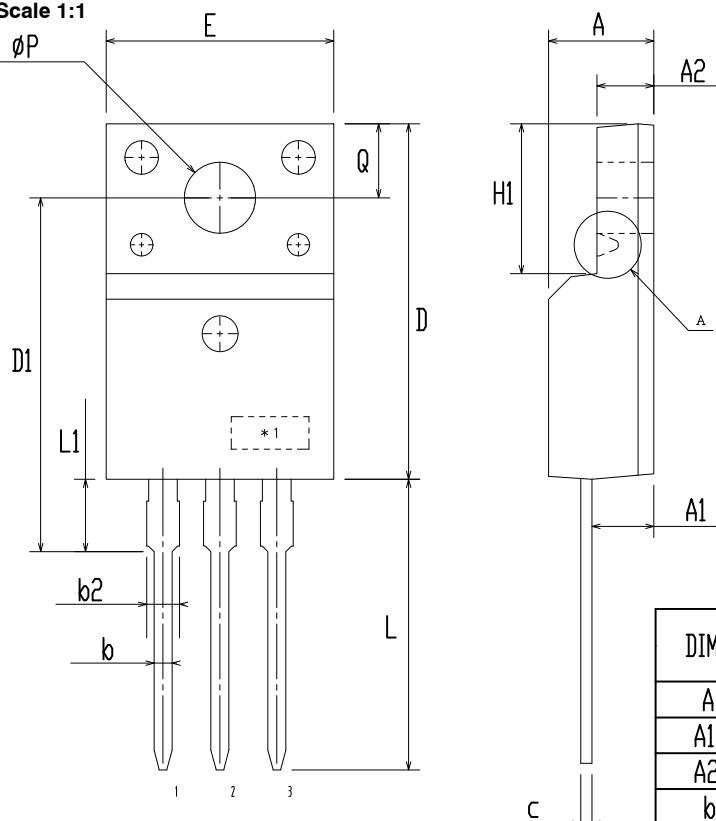


TYPICAL CHARACTERISTICS (CONTINUED)**Figure 7. Reverse Biased Safe Operating Area****Figure 8. Power Derating**



**TO-220 Fullpack, 3-Lead / TO-220F-3SG
CASE 221AT
ISSUE B**

DATE 19 JAN 2021



DIM	MILLIMITERS		
	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.56	2.76	2.96
A2	2.34	2.54	2.74
b	0.70	0.80	0.90
b2	~	~	1.47
c	0.45	0.50	0.60
D	15.67	15.87	16.07
D1	15.60	15.80	16.00
E	9.96	10.16	10.36
e	2.34	2.54	2.74
F	~	0.84	~
H1	6.48	6.68	6.88
L	12.78	12.98	13.18
L1	3.03	3.23	3.43
Ø P	2.98	3.18	3.38
Ø P1	~	1.00	~
Q	3.20	3.30	3.40

NOTES:

- A. DIMENSION AND TOLERANCE AS ASME Y14.5-2009
- B. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- C. OPTION 1 - WITH SUPPORT PIN HOLE
- OPTION 2 - NO SUPPORT PIN HOLE

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DESCRIPTION:	TO-220 FULLPACK, 3-LEAD / TO-220F-3SG	PAGE 1 OF 1

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