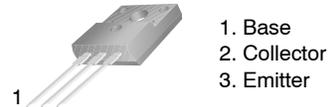


High Voltage Fast-Switching NPN Power Transistor

FJPF13007

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



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

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	
$V_{CE(sat)}$	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
$V_{BE(sat)}$	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 $\leq 2\%$

ORDERING INFORMATION

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

TYPICAL CHARACTERISTICS

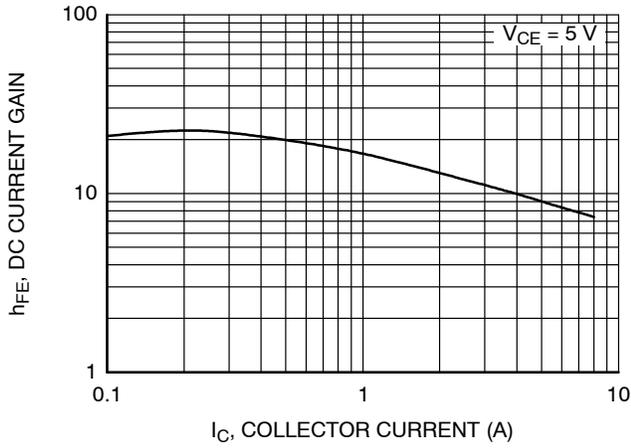


Figure 1. DC Current Gain

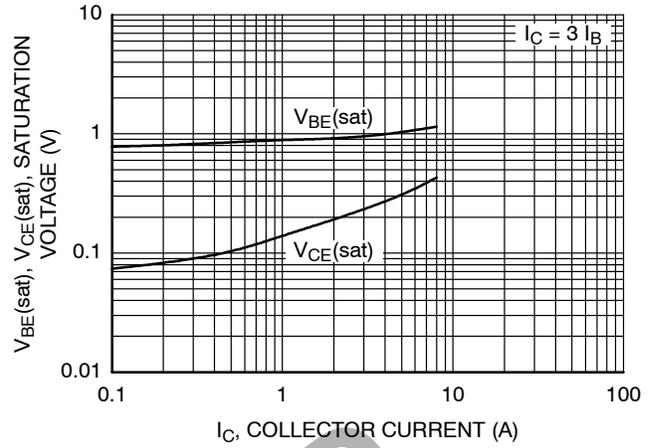


Figure 2. Saturation Voltage

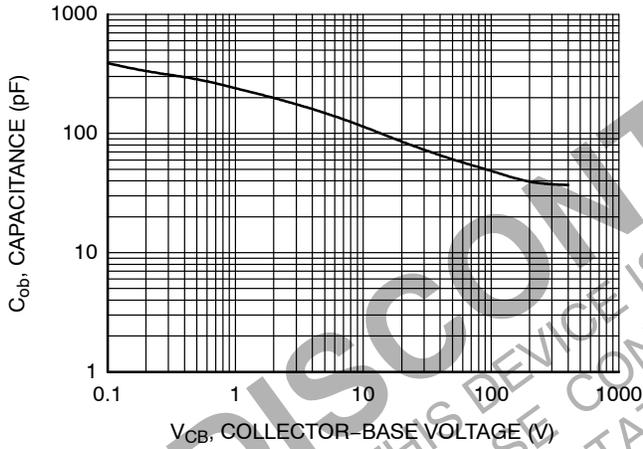


Figure 3. Collector Output Capacitance

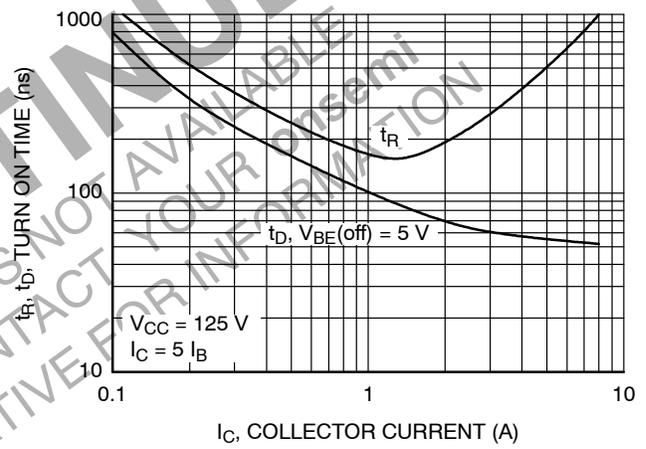


Figure 4. Turn On Time

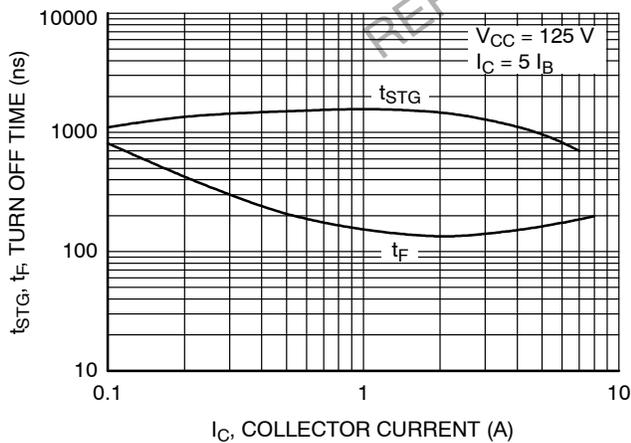


Figure 5. Turn Off Time

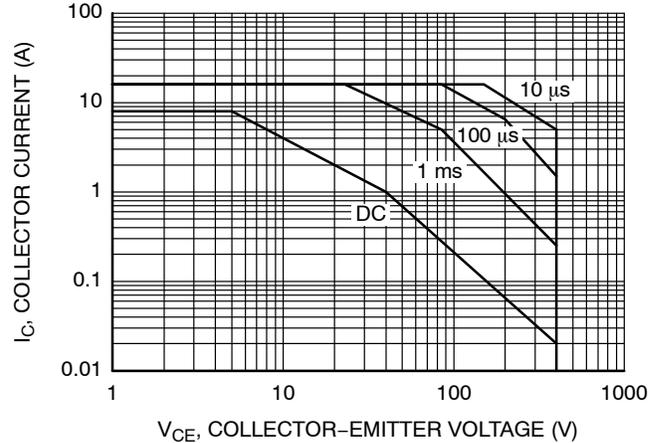


Figure 6. Forward Biased Safe Operating Area

TYPICAL CHARACTERISTICS (continued)

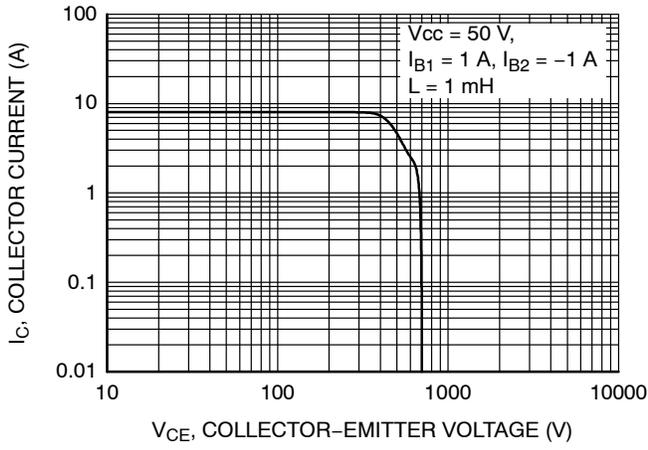


Figure 7. Reverse Biased Safe Operating Area

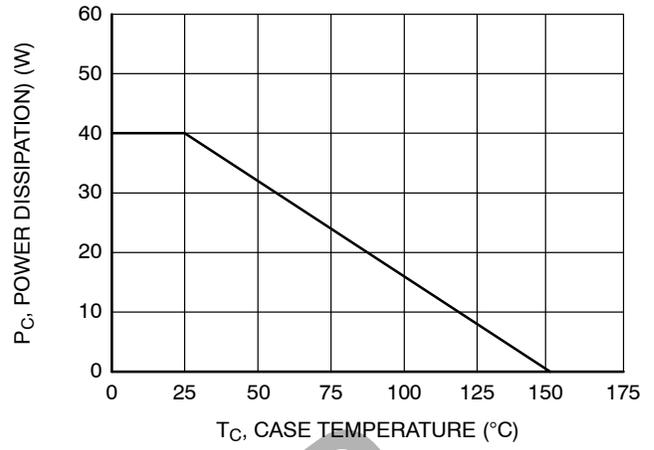


Figure 8. Power Derating

DISCONTINUED

THIS DEVICE IS NOT AVAILABLE
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FJPF13007

REVISION HISTORY

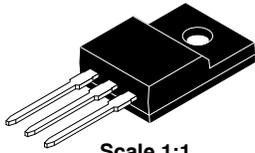
Revision	Description of Changes	Date
4	FJPF13007H2TU OPN Marked as Discontinued.	11/11/2025

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

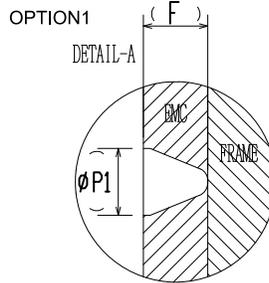
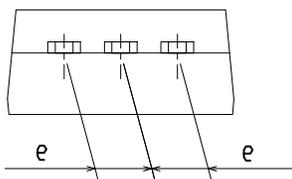
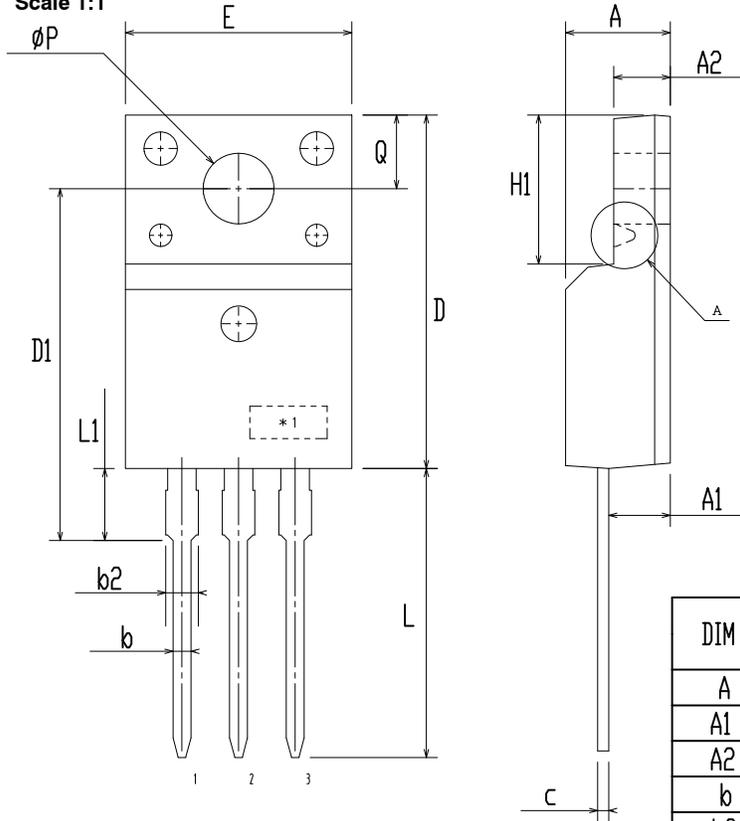
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TO-220 Fullpack, 3-Lead / TO-220F-3SG
CASE 221AT
ISSUE B

DATE 19 JAN 2021



Scale 1:1



DIM	MILLIMETERS		
	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 PROTRUCTIONS.
- 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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