

FJP13007H1 Datasheet

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DiGi Electronics Part Number	FJP13007H1-DG
Manufacturer	onsemi
Manufacturer Product Number	FJP13007H1
Description	TRANS NPN 400V 8A TO220-3
Detailed Description	Bipolar (BJT) Transistor NPN 400 V 8 A 4MHz 80 W Through Hole TO-220-3



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Purchase and inquiry

Manufacturer Product Number:

FJP13007H1

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

400 V

Current - Collector Cutoff (Max):

-

Power - Max:

80 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-220-3

Base Product Number:

FJP13007

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

8 A

Vce Saturation (Max) @ Ib, Ic:

3V @ 2A, 8A

DC Current Gain (hFE) (Min) @ Ic, Vce:

15 @ 2A, 5V

Frequency - Transition:

4MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-220-3

Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095



ON Semiconductor®

FJP13007

High Voltage Fast-Switching NPN Power Transistor

Features

- High Voltage High Speed Power Switch Application
- High Voltage Capability
- High Switching Speed
- Suitable for Electronic Ballast and Switching Mode Power Supply

1. Base 2. Collector 3. Emitter
TO-220

Ordering Information

Part Number	Top Mark	Package	Packing Method
FJP13007TU	J13007	TO-220 3L (Dual Gauge)	Rail
FJP13007H1TU	J13007-1	TO-220 3L (Single Gauge)	Rail
FJP13007H1TU-F08	J13007-1	TO-220 3L (Dual Gauge)	Rail
FJP13007H2TU	J13007-2	TO-220 3L (Dual Gauge)	Rail
FJP13007H2TU-F08	J13007-2	TO-220 3L (Dual Gauge)	Rail

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_C = 25^\circ\text{C}$ 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 (DC)	4	A
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-65 to 150	$^\circ\text{C}$

FJP13007 — High Voltage Fast-Switching NPN Power Transistor

Electrical Characteristics

Values are at $T_C = 25^\circ\text{C}$ 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	mA
h_{FE1}	DC Current Gain ⁽¹⁾	$V_{CE} = 5\text{ V}, I_C = 2\text{ A}$	8		60	
h_{FE2}	DC Current Gain ⁽¹⁾	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	5		30	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{ A}, I_B = 0.4\text{ A}$			1.0	V
		$I_C = 5\text{ A}, I_B = 1\text{ A}$			2.0	
		$I_C = 8\text{ A}, I_B = 2\text{ A}$			2.5	
$V_{BE(sat)}$	Collector-Base Saturation Voltage	$I_C = 2\text{ A}, I_B = 0.4\text{ A}$			1.2	V
		$I_C = 5\text{ A}, I_B = 1\text{ A}$			1.5	
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}$	4			MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{ V}, f = 0.1\text{ MHz}$		10		pF
t_{ON}	Turn-On Time	$V_{CC} = 125\text{ V}, I_C = 1\text{ A},$ $I_{B1} = -I_{B2} = 100\text{ mA}$			1.6	μs
t_{STG}	Storage Time	$I_{B1} = -I_{B2} = 100\text{ mA}$			3.0	μs
t_F	Fall Time	$R_L = 25\text{ }\Omega$			0.7	μs

Note:

- Pulse test: $p_w \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

h_{FE} Classification

Classification	H1	H2
1	16 ~ 23	26 ~ 39

Typical Performance Characteristics

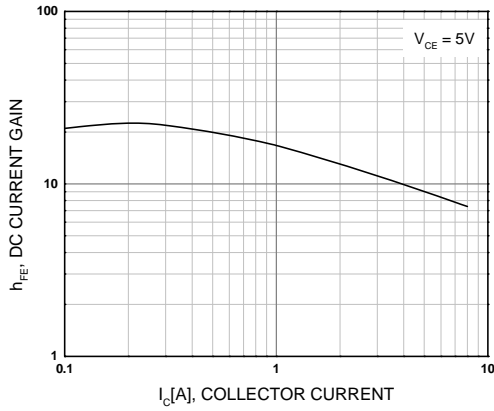


Figure 1. DC Current Gain

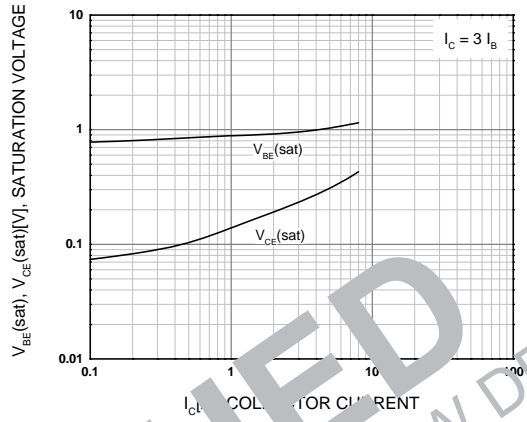


Figure 2. Saturation Voltage

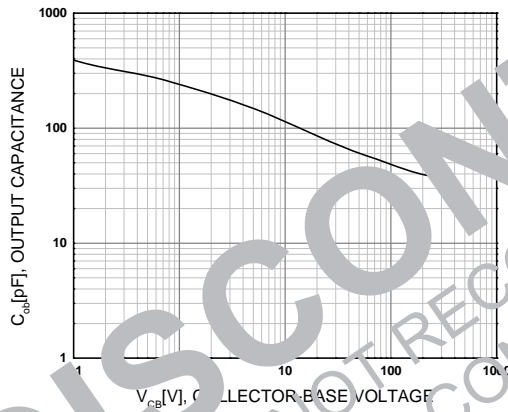


Figure 3. Collector Output Capacitance

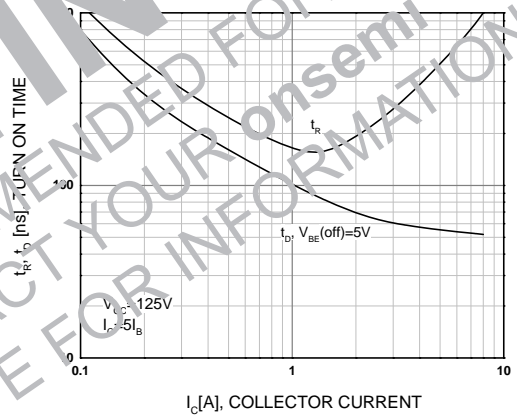


Figure 4. Turn-On Time

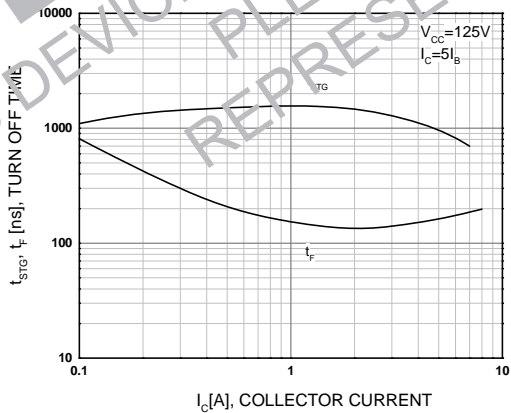


Figure 5. Turn-Off Time

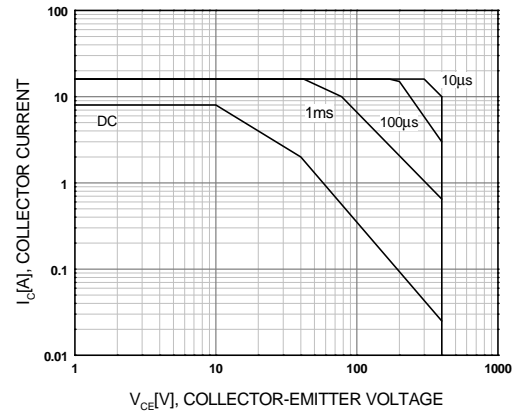


Figure 6. Forward Biased Safe Operating Area

Typical Performance Characteristics (Continued)

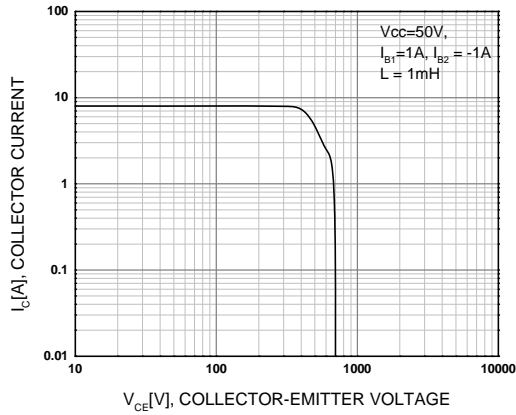


Figure 7. Reverse Biased Safe Operating Area

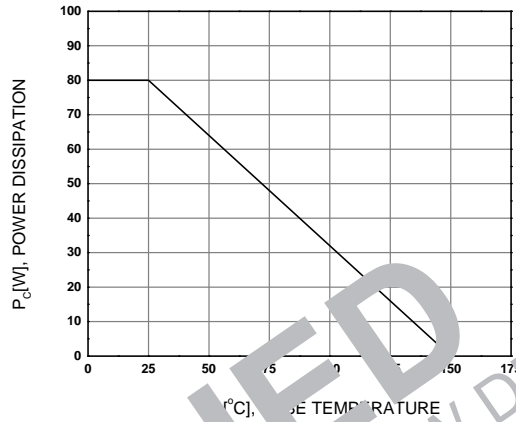



Figure 8. Power Derating

DISCONTINUED
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