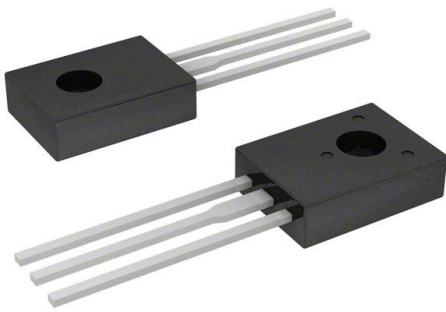


FJE3303H1TU Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

| | |
|------------------------------|--|
| DiGi Electronics Part Number | FJE3303H1TU-DG |
| Manufacturer | onsemi |
| Manufacturer Product Number | FJE3303H1TU |
| Description | TRANS NPN 400V 1.5A TO126-3 |
| Detailed Description | Bipolar (BJT) Transistor NPN 400 V 1.5 A 4MHz 20 W Through Hole TO-126-3 |



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

FJE3303H1TU

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

400 V

Current - Collector Cutoff (Max):

10 μ A (ICBO)

Power - Max:

20 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-225AA, TO-126-3

Base Product Number:

FJE3303

Manufacturer:

onsemi

Product Status:

Active

Current - Collector (Ic) (Max):

1.5 A

Vce Saturation (Max) @ Ib, Ic:

3V @ 500mA, 1.5A

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

8 @ 500mA, 2V

Frequency - Transition:

4MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-126-3

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

EAR99



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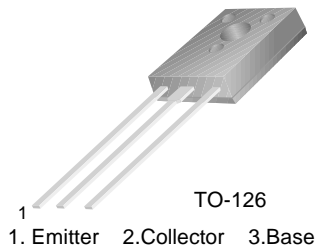
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FJE3303

High Voltage Fast-Switching NPN Power Transistor

- High Voltage Capability
- High Switching Speed
- Suitable for Electronic Ballast and Switching Regulator



Absolute Maximum Ratings T_C = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|------------------|---|-----------|-------|
| 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) | 1.5 | A |
| I _{CP} | Collector Current (Pulse) * | 3 | A |
| I _B | Base Current (DC) | 0.75 | A |
| I _{BP} | Base Current (Pulse) * | 1.5 | A |
| P _C | Collector Dissipation (T _C = 25°C) | 20 | W |
| T _J | Junction Temperature | 150 | °C |
| T _{STG} | Storage Temperature | -65 ~ 150 | °C |

* Pulse Test: Pulse Width = 5ms, Duty Cycle ≤ 10%

Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Conditions | Min. | Typ. | Max | Units |
|------------------------|--------------------------------------|---|--------|------|-------------------|---------------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C = 500\mu\text{A}, I_E = 0$ | 700 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 5\text{mA}, I_B = 0$ | 400 | | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E = 500\mu\text{A}, I_C = 0$ | 9 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = 700\text{V}, I_E = 0$ | | | 10 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = 9\text{V}, I_C = 0$ | | | 10 | μA |
| h_{FE1} h_{FE2} | DC Current Gain * | $V_{CE} = 2\text{V}, I_C = 0.5\text{A}$ $V_{CE} = 2\text{V}, I_C = 1.0\text{A}$ | 8 5 | | 21 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 0.5\text{A}, I_B = 0.1\text{A}$ $I_C = 1.0\text{A}, I_B = 0.25\text{A}$ $I_C = 1.5\text{A}, I_B = 0.5\text{A}$ | | | 0.5 1.0 3.0 | V V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 0.5\text{A}, I_B = 0.1\text{A}$ $I_C = 1.0\text{A}, I_B = 0.25\text{A}$ | | | 1.0 1.2 | V V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = 10\text{V}, I_C = 0.1\text{A}$ | 4 | | | MHz |
| C_{ob} | Output Capacitance | $V_{CB} = 10\text{V}, f = 0.1\text{MHz}$ | | 21 | | pF |
| t_{ON} | Turn On Time | $V_{CC} = 125\text{V}, I_C = 1\text{A}$ $I_{B1} = 0.2\text{A}, I_{B2} = -0.2\text{A}$ $R_L = 125\Omega$ | | | 1.1 | μs |
| t_{STG} | Storage Time | | | | 4.0 | μs |
| t_F | Fall Time | | | | 0.7 | μs |

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

| Classification | H1 | H2 |
|----------------|--------|---------|
| h_{FE1} | 8 ~ 16 | 14 ~ 21 |

Typical Performance Characteristics

Figure 1. Static Characteristic

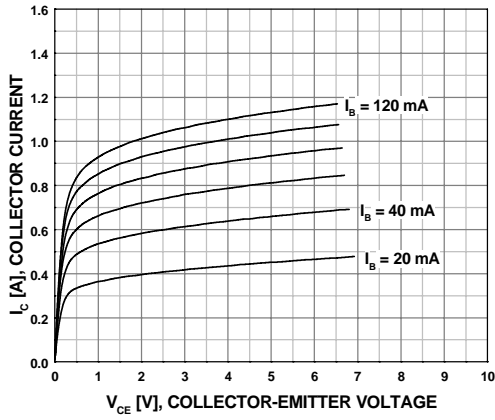


Figure 2. DC Current Gain

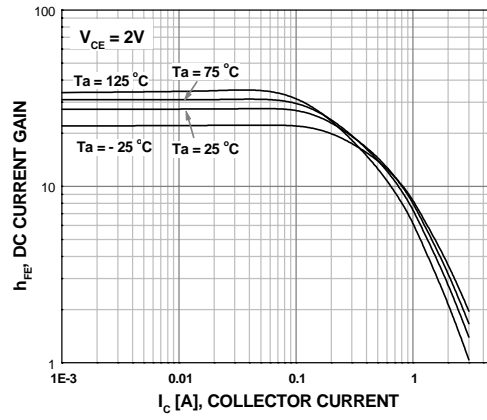


Figure 3. Collector-Emitter Saturation Voltage

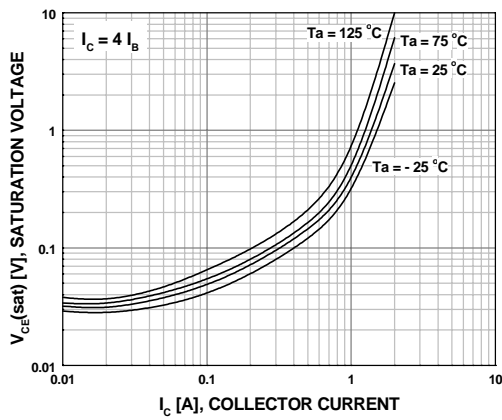


Figure 4. Base-Emitter Saturation Voltage

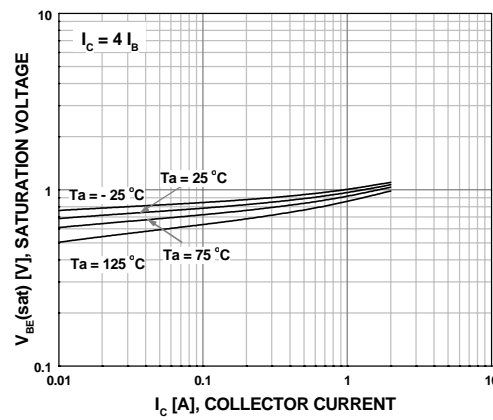


Figure 5. Resistive Load Switching Time

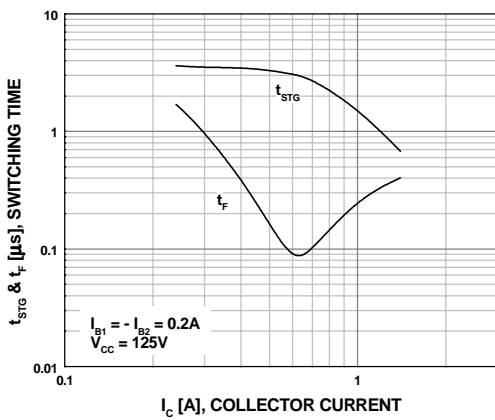
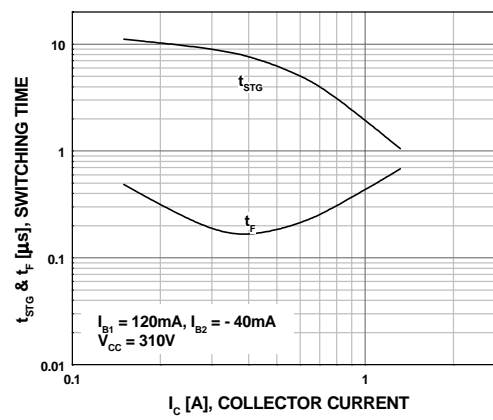


Figure 6. Resistive Load Switching Time



Typical Performance Characteristics (Continued)

Figure 7. Forward Biased Safe Operating Area

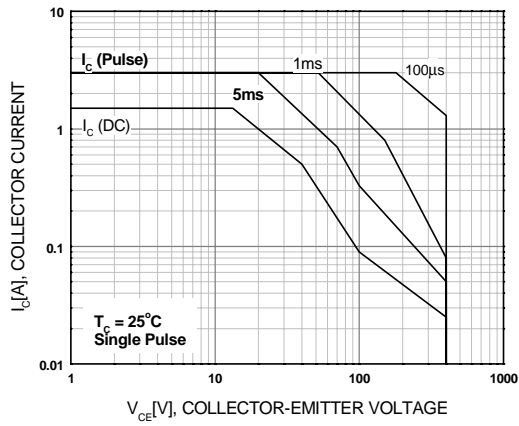


Figure 8. Reverse Biased Safe Operating Area

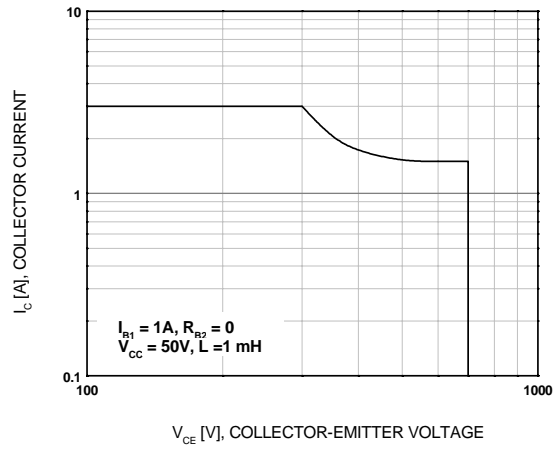
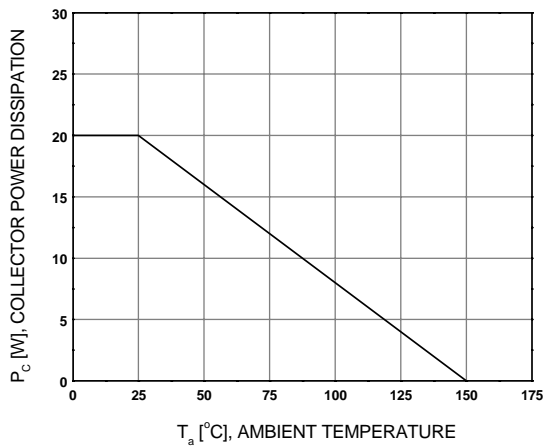
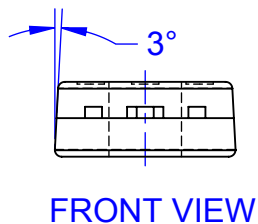
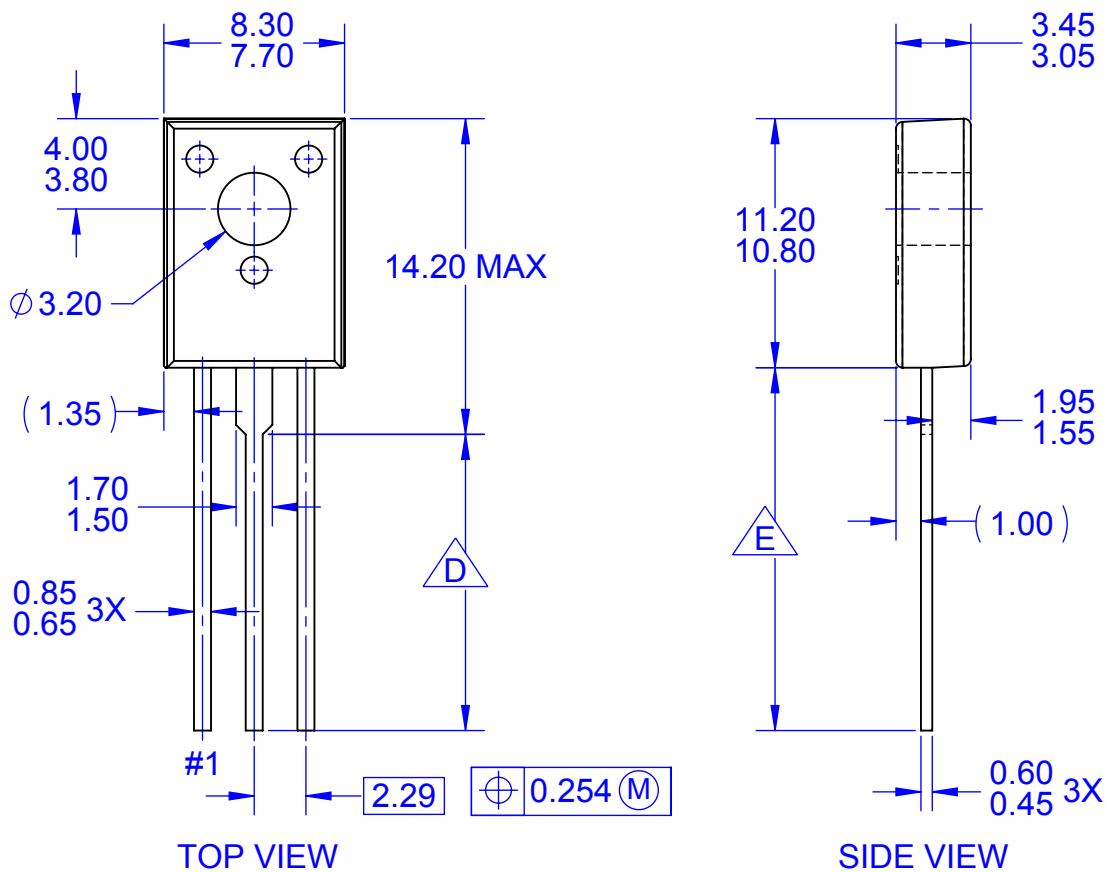


Figure 9. Power Derating





| PRODUCTION CODE | TERMINAL LENGTH "D" | TERMINAL LENGTH "E" |
|-------------------|---------------------|---------------------|
| TSSTU | 3.45 - 4.05 | 6.45-7.45 |
| TSTU | 2.36 - 2.96 | 5.36-6.36 |
| NONE (STD LENGTH) | 12.76 - 13.36 | 15.76-16.76 |

NOTES:


- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

FOR TERMINAL LENGTH "D", REFER TO TABLE

FOR TERMINAL LENGTH "E", REFER TO TABLE

F. DRAWING FILENAME: MKT-TO126Arev2



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