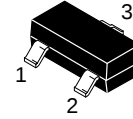


NPN Epitaxial Silicon Transistor

FJV1845



1. Base
2. Emitter
3. Collector

SOT-23
CASE 318

Amplifier Transistor

- Complement to FJV992

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

Symbol	Rating	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	50	mA
I_B	Base Current	10	mA
P_C	Collector Dissipation	300	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55~150	$^\circ\text{C}$

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_{FE2} CLASSIFICATION

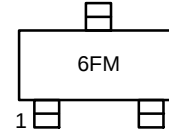
Classification	P	F	E	U
h_{FE2}	200~400	300~600	400~800	600~1200

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

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
I_{CBO}	Collector Cut-off Current	$V_{CB} = 120\text{ V}, I_E = 0$	–	–	50	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{ V}, I_C = 0$	–	–	50	nA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 6\text{ V}, I_C = 0.1\text{ mA}$ $V_{CE} = 6\text{ V}, I_C = 1\text{ mA}$	150 200	580 600	– 1200	
$V_{BE(ON)}$	Base-Emitter On Voltage	$V_{CE} = 6\text{ V}, I_C = 1\text{ mA}$	0.55	0.59	0.65	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$	–	0.07	0.3	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 6\text{ V}, I_C = 1\text{ mA}$	50	110	–	MHz
C_{ob}	Output Capacitance	$V_{CB} = 30\text{ V}, I_E = 0, f = 1\text{ MHz}$	–	1.6	2.5	pF

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.

MARKING DIAGRAM



- 6 = Specific Device Code
F = h_{FE} Classification
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
FJV1845FMTF	SOT-23 (Pb-Free / Halogen Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](#).

TYPICAL CHARACTERISTICS

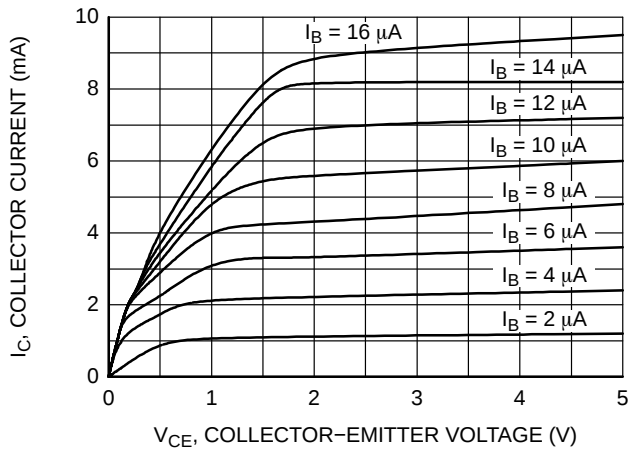


Figure 1. Static Characteristic

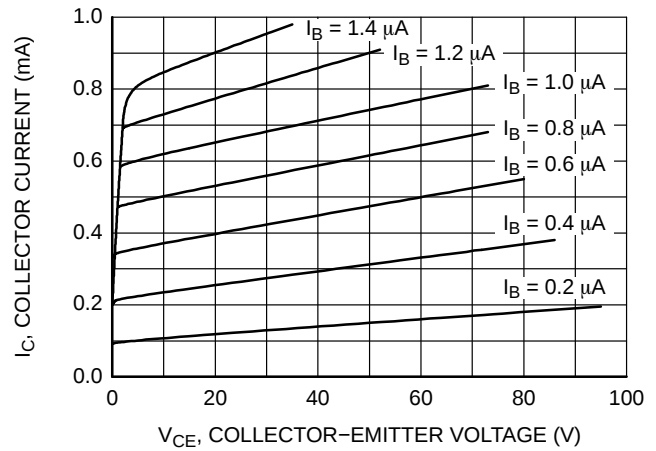


Figure 2. Static Characteristic

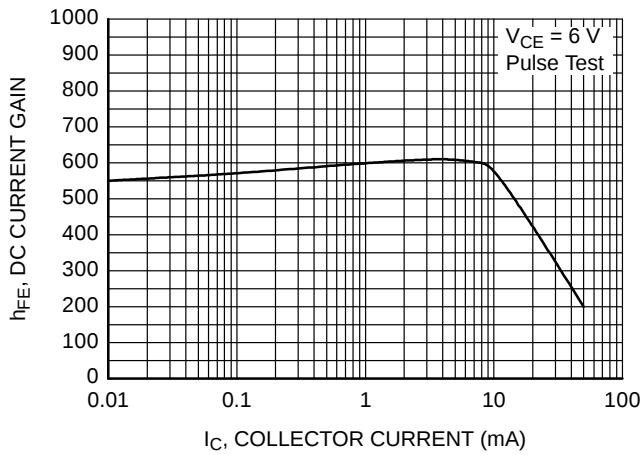


Figure 3. DC Current Gain

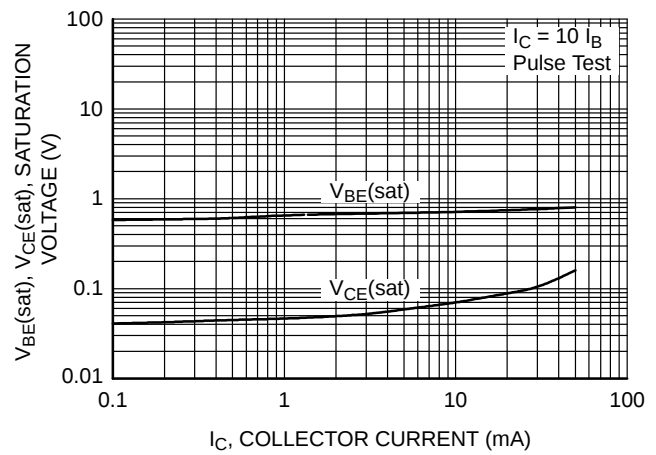
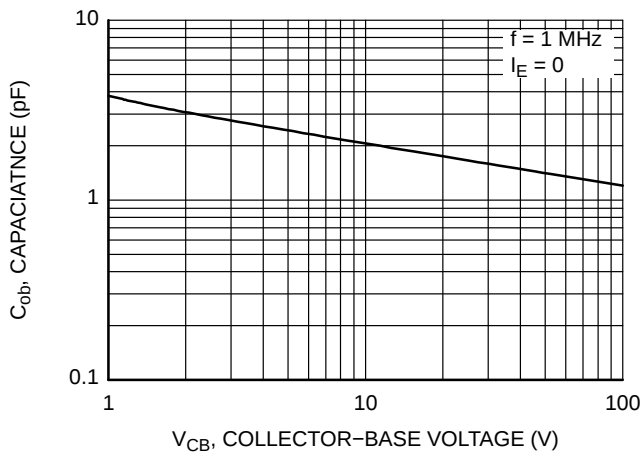
Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Figure 5. Collector Output Capacitance

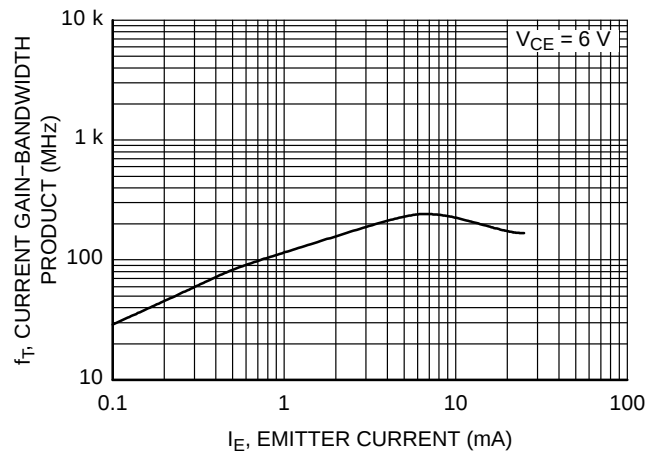


Figure 6. Current Gain Bandwidth Product

TYPICAL CHARACTERISTICS (continued)

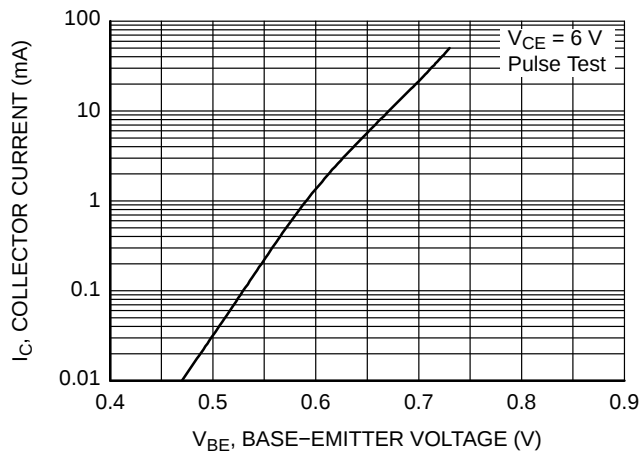


Figure 7. Collector Current vs. Base-Emitter Voltage

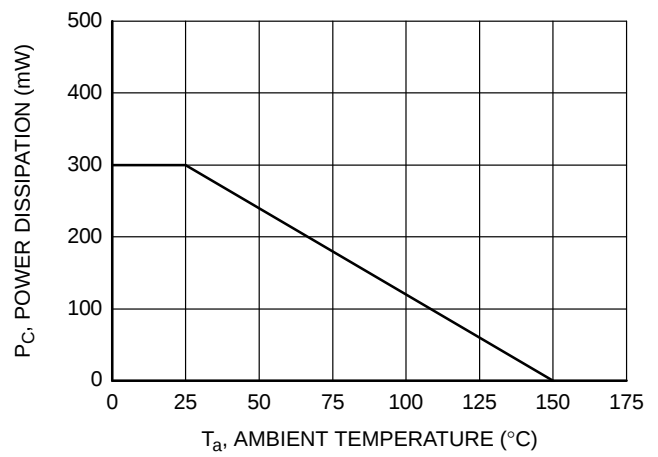


Figure 8. Power Derating



SCALE 4:1

SOT-23 (TO-236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

DATE 14 AUG 2024



MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.89	1.00	1.11
A1	0.01	0.06	0.10
b	0.37	0.44	0.50
c	0.08	0.14	0.20
D	2.80	2.90	3.04
E	1.20	1.30	1.40
e	1.78	1.90	2.04
L	0.30	0.43	0.55
L1	0.35	0.54	0.69
HE	2.10	2.40	2.64
T	0°	---	10°

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSIONS: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

GENERIC
MARKING DIAGRAM*



XXX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



RECOMMENDED
MOUNTING FOOTPRINT

* For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

STYLES ON PAGE 2

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CASE 318
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DATE 14 AUG 2024

STYLE 1 THRU 5: CANCELLED	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7: PIN 1. EMITTER 2. BASE 3. COLLECTOR	STYLE 8: PIN 1. ANODE 2. NO CONNECTION 3. CATHODE		
STYLE 9: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 10: PIN 1. DRAIN 2. SOURCE 3. GATE	STYLE 11: PIN 1. ANODE 2. CATHODE 3. CATHODE-ANODE	STYLE 12: PIN 1. CATHODE 2. CATHODE 3. ANODE	STYLE 13: PIN 1. SOURCE 2. DRAIN 3. GATE	STYLE 14: PIN 1. CATHODE 2. GATE 3. ANODE
STYLE 15: PIN 1. GATE 2. CATHODE 3. ANODE	STYLE 16: PIN 1. ANODE 2. CATHODE 3. CATHODE	STYLE 17: PIN 1. NO CONNECTION 2. ANODE 3. CATHODE	STYLE 18: PIN 1. NO CONNECTION 2. CATHODE 3. ANODE	STYLE 19: PIN 1. CATHODE 2. ANODE 3. CATHODE-ANODE	STYLE 20: PIN 1. CATHODE 2. ANODE 3. GATE
STYLE 21: PIN 1. GATE 2. SOURCE 3. DRAIN	STYLE 22: PIN 1. RETURN 2. OUTPUT 3. INPUT	STYLE 23: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 24: PIN 1. GATE 2. DRAIN 3. SOURCE	STYLE 25: PIN 1. ANODE 2. CATHODE 3. GATE	STYLE 26: PIN 1. CATHODE 2. ANODE 3. NO CONNECTION
STYLE 27: PIN 1. CATHODE 2. CATHODE 3. CATHODE	STYLE 28: PIN 1. ANODE 2. ANODE 3. ANODE				

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