

Features

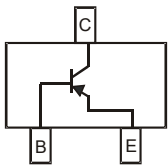
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 833°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-600	mA
Collector Power Dissipation	P_C	150	mW

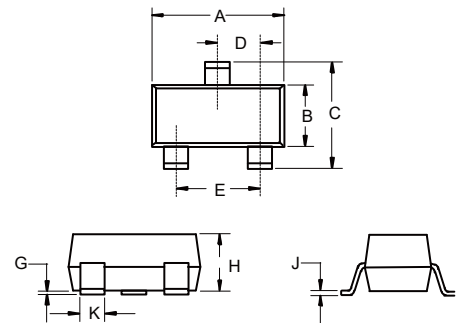
Internal Structure



Marking: 2F

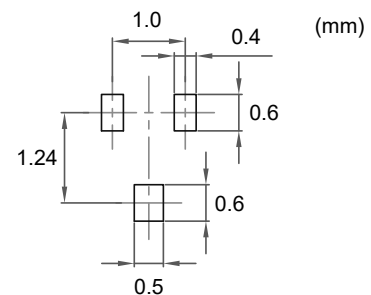
PNP General Purpose Amplifier

SOT-523



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.030	0.033	0.75	0.85	
C	0.057	0.069	1.45	1.75	
D	0.020		0.50		TYP.
E	0.035	0.043	0.90	1.10	
G	0.000	0.004	0.00	0.10	
H	0.024	0.031	0.60	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60			V	$I_C = -10\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60			V	$I_C = -10mA, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E = -10\mu A, I_C = 0$
Collector-Base Cutoff Current	I_{CBO}			-10	nA	$V_{CB} = -50V, I_E = 0$
Emitter-Base Cutoff Current	I_{EBO}			-10	nA	$V_{EB} = -4V, I_C = 0$
DC Current Gain ^(Note1)	$h_{FE(1)}$	75				$V_{CE} = -10V, I_C = -0.1mA$
	$h_{FE(2)}$	100				$V_{CE} = -10V, I_C = -1mA$
	$h_{FE(3)}$	100		300		$V_{CE} = -10V, I_C = -10mA$
	$h_{FE(4)}$	100				$V_{CE} = -10V, I_C = -150mA$
	$h_{FE(5)}$	50				$V_{CE} = -10V, I_C = -500mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.4	V	$I_C = -150mA, I_B = -15mA$
				-1.6	V	$I_C = -500mA, I_B = -50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-1.3	V	$I_C = -150mA, I_B = -15mA$
				-2.6	V	$I_C = -500mA, I_B = -50mA$
Transition Frequency	f_T		140		MHz	$V_{CE} = -12V, I_C = -2mA, f = 30MHz$
Output Capacitance	C_{cbo}			5	pF	$V_{CB} = -12V, I_E = 0, f = 100KHz$
Turn on Time	t_{on}			45	ns	$V_{CC} = -30V, I_C = -150mA$ $I_{B1} = -15mA$
Delay Time	t_d			10	ns	
Rise Time	t_r			40	ns	
Turn off Time	t_{off}			100	ns	
Storage Time	t_s			80	ns	$V_{CC} = -6V, I_C = -150mA$ $I_{B1} = I_{B2} = -15mA$
Fall Time	t_f			30	ns	

Note: 1. Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$

Curve Characteristics

Fig. 1 - Static Characteristics

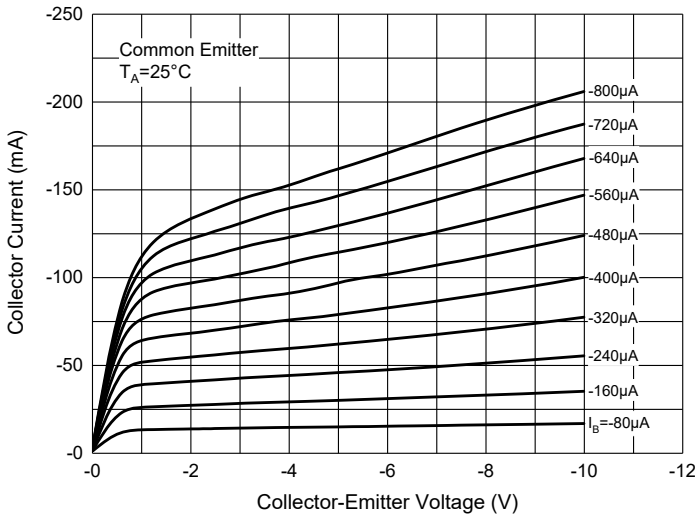


Fig. 2 - DC Current Gain Characteristics

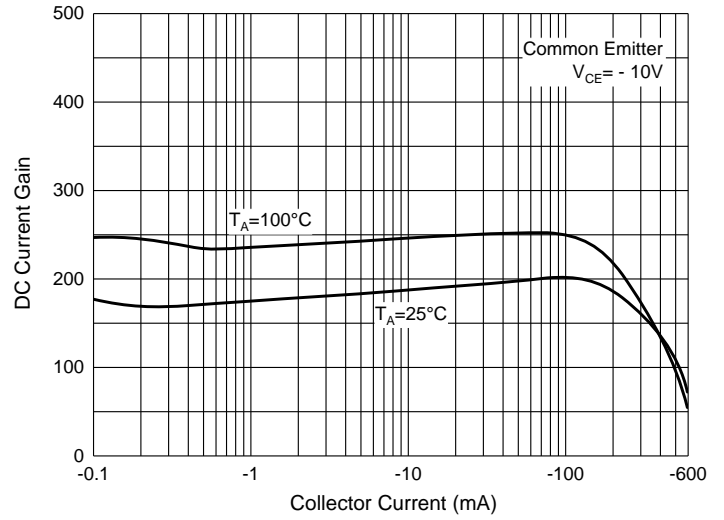


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

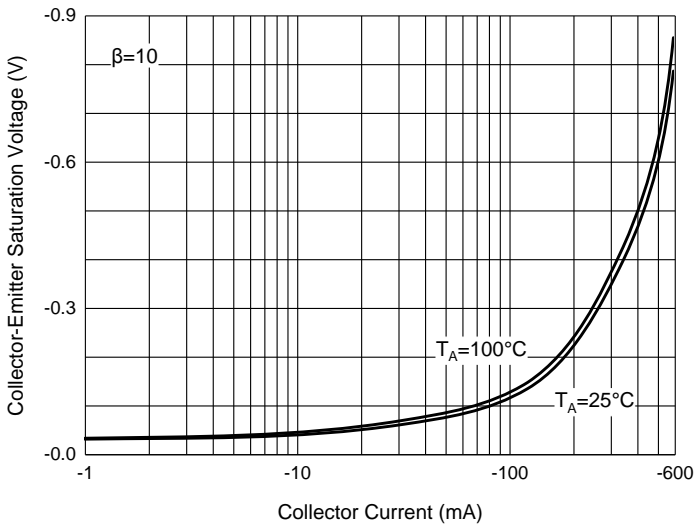


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

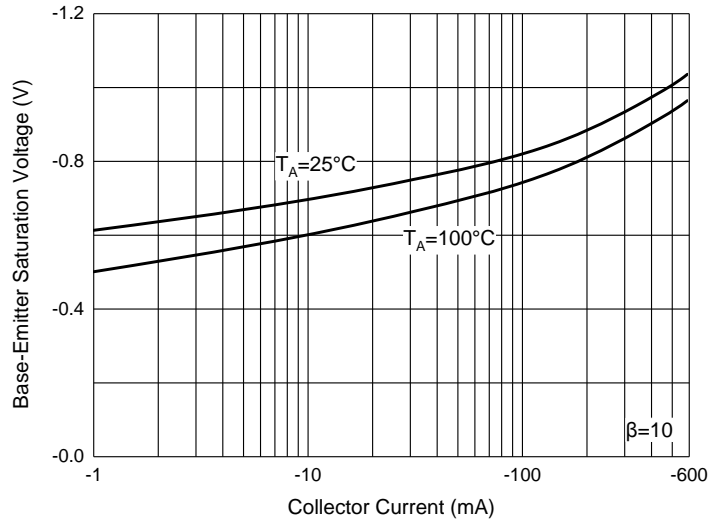


Fig. 5 - Base-Emitter Voltage Characteristics

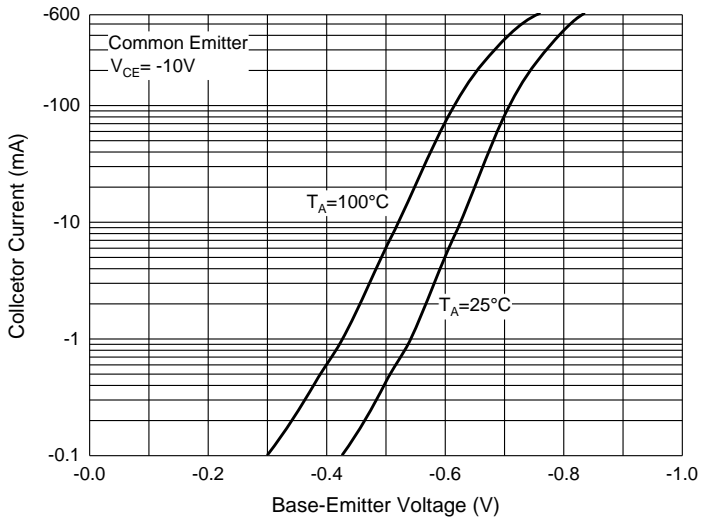
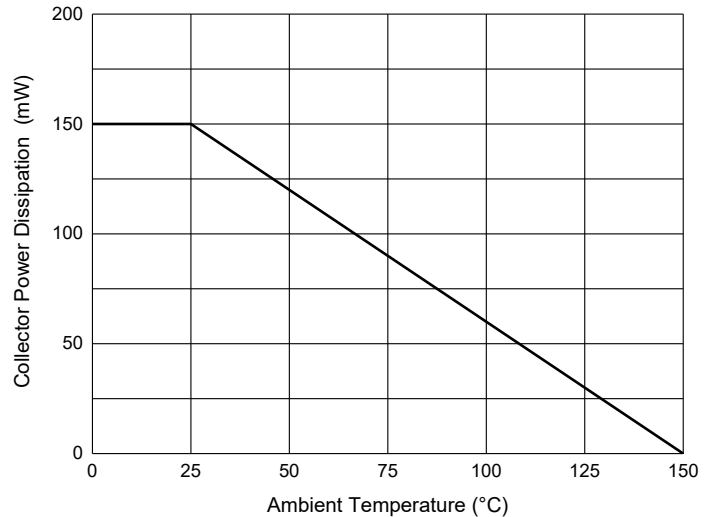


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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