

Features

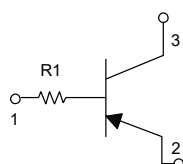
- Built-In Bias Resistors Enable the Configuration of an Inverter Circuit Without Connecting External Input Resistors
- The Bias Resistors Consist of Thin-Film Resistors With Complete Isolation to Allow Negative Biasing of the Input. They Also Have the Advantage of Almost Completely Eliminating Parasitic Effects
- Only the On/Off Conditions Need to Be Set For Operation, Making Device Design Easy
- 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

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	-50	V
Collector-Base Voltage	V_{CBO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current-Continuous	I_C	-100	mA
Collector Dissipation	P_C	150	mW
Junction Temperature Range	T_J	-55 ~ 150	°C
Storage Temperature Range	T_{STG}	-55 ~ 150	°C

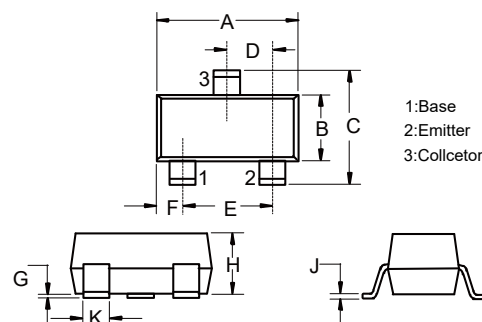
Device Marking: 94

Internal Structure



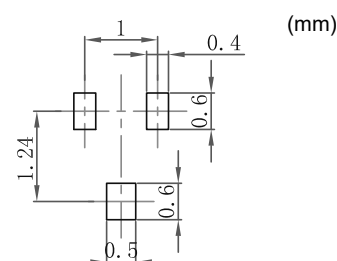
PNP Digital Transistor

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	$V_{(BR)CBO}$	-50	---	---	V	$I_C = -50\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-50	---	---	V	$I_C = -1mA, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	---	---	V	$I_E = -50\mu A, I_C = 0$
Collector Cut-off Current	I_{CBO}	---	---	-0.5	μA	$V_{CB} = -50V, I_E = 0$
Emitter Cut-off Current	I_{EBO}	---	---	-0.5	μA	$V_{EB} = -4V, I_C = 0$
DC Current Gain	h_{FE}	100	250	600	---	$I_C = -1mA, V_{CE} = -5V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	---	---	-0.3	V	$I_C = -10mA, I_B = -1mA$
Input Resistance	R_1	7	10	13	K Ω	
Transition Frequency	f_T	---	250	---	MHz	$V_{CE} = -10.0V, I_E = 5mA, f = 100MHz$

Curve Characteristics

Fig. 1 - Static Characteristics

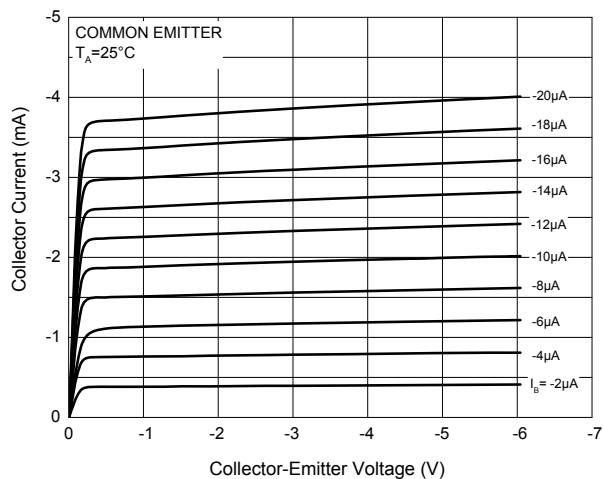


Fig. 2 - DC Current Gain Characteristics

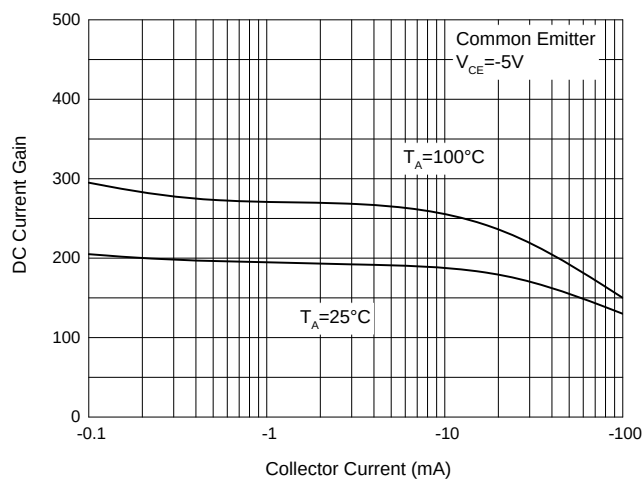


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

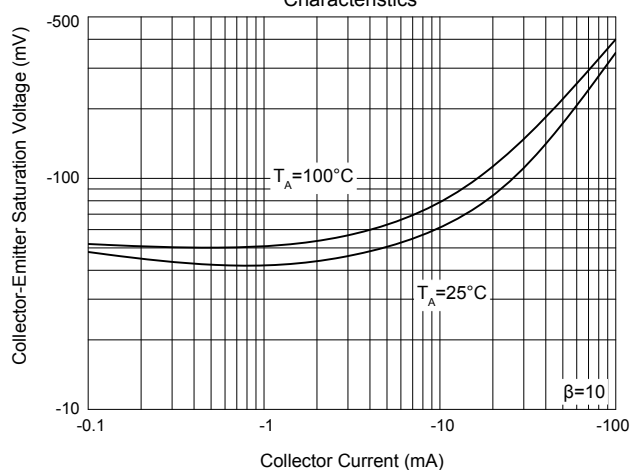


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

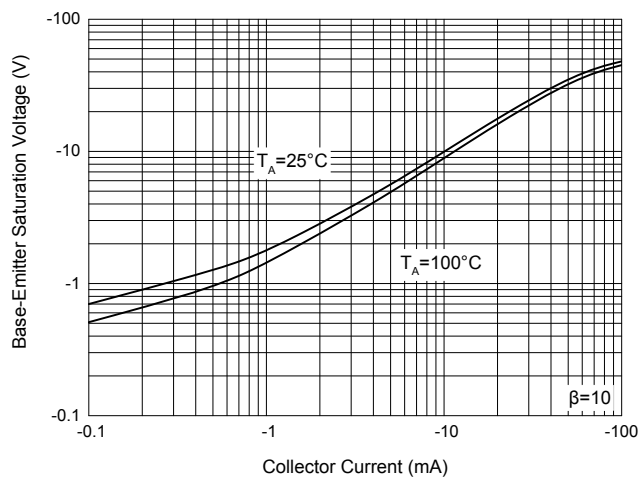
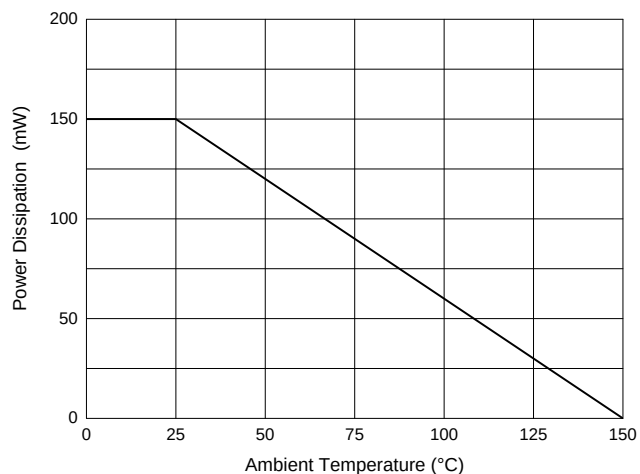


Fig. 5 - Power Derating Curve



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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