

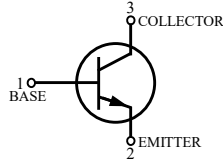
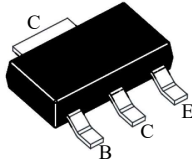


2SD2510SEH

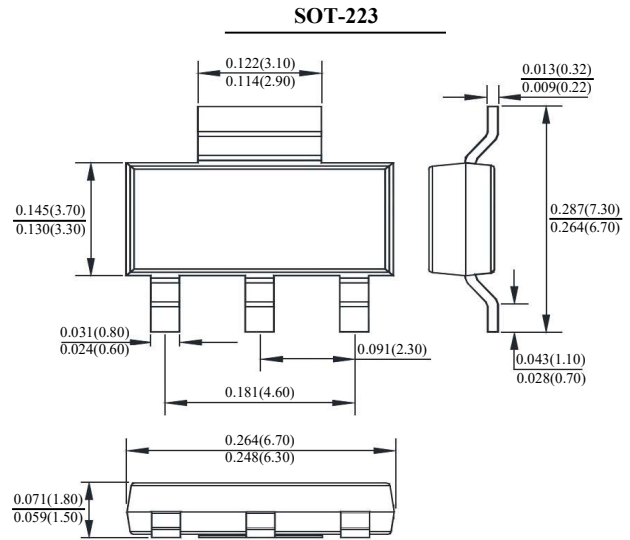
NPN TRANSISTOR

FEATURES

- High power dissipation
- Low saturation voltage
- Suffix "H" indicates Halogen-free parts, ex.2SD2510SEH



B	Base
C	Collector
E	Emitter



Dimensions in inches and (millimeter)

Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	180	V
Collector Emitter Voltage	V_{CEO}	100	V
Emitter Collector Voltage	V_{CEO}	6	V
Emitter Base Voltage	V_{EBO}	7	V
Collector Current (Note 1)	I_C	3	A
Base Current	I_B	1	A
Power Dissipation (Note 1)	P_{tot}	1.6	W
Thermal Resistance from Junction to Ambient (Note 1)	$R_{\theta JA}$	78	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	16	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note:

1. Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate.



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Electrical Characteristics ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	$V_{CE}=2V, I_C=10mA$	h_{FE}	300	-	900	-
	$V_{CE}=2V, I_C=500mA$		120	-	-	
	$V_{CE}=2V, I_C=1000mA$		40	-	-	
	$V_{CE}=2V, I_C=3000mA$		-	10	-	
Collector Base Cutoff Current	$V_{CB}=180V$	I_{CBO}	-	-	50	nA
Emitter Base Cutoff Current	$V_{EB}=5.6V$	I_{EBO}	-	-	50	nA
Collector Base Breakdown Voltage	$I_C=100\mu A$	$V_{(BR)CBO}$	180	-	-	V
Collector Emitter Breakdown Voltage	$I_C=10mA$	$V_{(BR)CEO}$	100	-	-	V
Emitter Collector Breakdown Voltage	$I_E=100\mu A$	$V_{(BR)ECO}$	6	-	-	V
Emitter Base Breakdown Voltage	$I_E=100\mu A$	$V_{(BR)EBO}$	7	-	-	V
Collector Emitter Saturation Voltage	$I_C=500mA, I_B=10mA$	$V_{CE(sat)}$	-	-	0.170	V
	$I_C=1000mA, I_B=100mA$		-	-	0.100	
	$I_C=2500mA, I_B=250mA$		-	-	0.345	
	$I_C=3000mA, I_B=600mA$		-	-	0.500	
Base Emitter Saturation Voltage	$I_C=3000mA, I_B=600mA$	$V_{BE(sat)}$	-	-	1.10	V
Base Emitter Turn-On Voltage	$V_{CE}=2V, I_C=3000mA$	$V_{BE(on)}$	-	-	1.00	V
Transition Frequency	$V_{CE}=10V, I_C=50mA,$ $f=100MHz$	f_T	-	175	-	MHz
Collector Input Capacitance	$V_{EB}=0.5V, f=1MHz$	C_{ib}	-	-	250	pF
Collector Output Capacitance	$V_{CB}=10V, f=1MHz$	C_{ob}	-	-	15	pF
Delay time	$V_{CC}=10V, I_C=500mA,$ $I_{B1}=-I_{B2}=50mA$	t_d	-	16.4	-	ns
Rise time		t_r	-	115	-	
Storage time		t_s	-	763	-	
Fall time		t_f	-	158	-	



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RATINGS AND CHARACTERISTIC CURVES

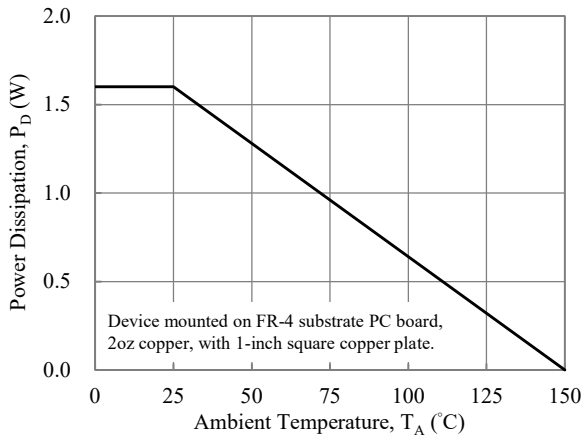


Fig. 1-Power Derating Curves

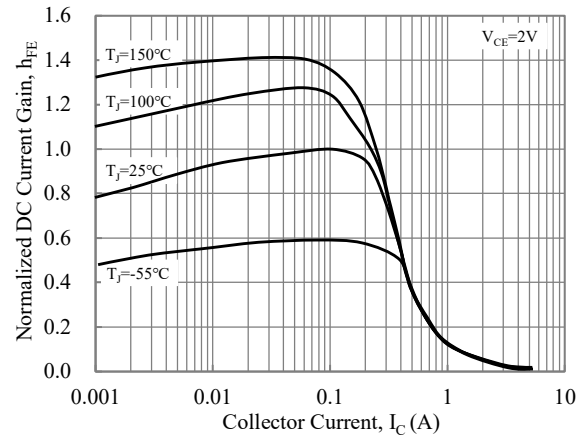


Fig. 2-Current Gain vs Collector Current

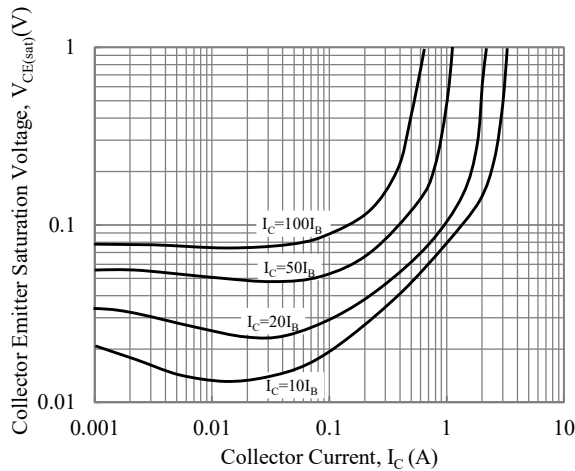


Fig. 3-Collector Emitter Saturation Voltage vs Collector Current

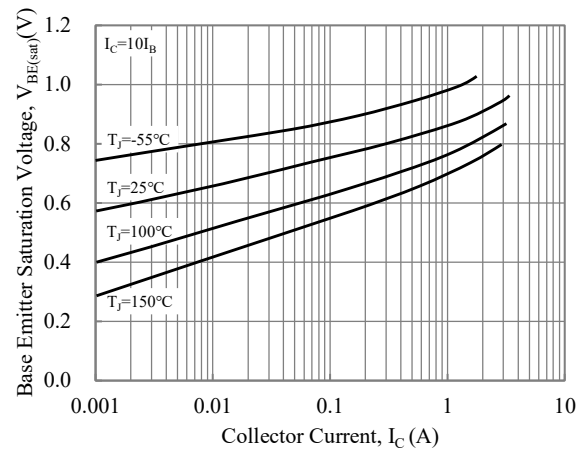


Fig. 4-Base Emitter Saturation Voltage vs Collector Current

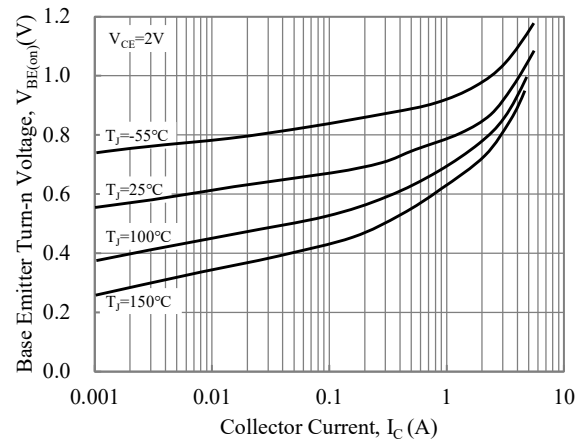


Fig. 5-Base Emitter Turn-on Voltage vs Collector Current