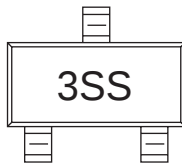


NPN Darlington Transistors

FEATURES

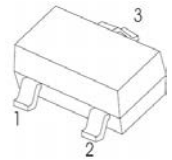
- High Current Gain

MARKING: 3SS



3SS = Device code

SOT - 23

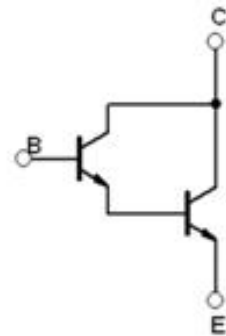


1. BASE
2. EMITTER
3. COLLECTOR

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	12	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^\circ\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^\circ\text{C}$

Equivalent Circuit



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	80			V
Collector-emitter sustain voltage	$V_{CEO(sus)}$	$I_C=100\mu\text{A}, V_{BE}=0$	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	12			V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$			0.1	μA
Collector cut-off current	I_{CES}	$V_{CE}=60\text{V}, V_{BE}=0$			0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=10\text{V}, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	10			K
	$h_{FE(2)}^*$	$V_{CE}=5\text{V}, I_C=100\text{mA}$	10			K
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C=10\text{mA}, I_B=0.01\text{mA}$			1.2	V
	$V_{CE(sat)2}^*$	$I_C=100\text{mA}, I_B=0.1\text{mA}$			1.5	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=5\text{V}, I_C=100\text{mA}$			2	V
Collector output capacitance	C_{ob}	$V_{CB}=1\text{V}, I_E=0, f=1\text{MHz}$			8	pF
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	125			MHz

*Pulse test: pulse width $\hat{C}300\mu\text{s}$, duty cycle $\hat{C}2.0\%$.

Typical Characteristics

