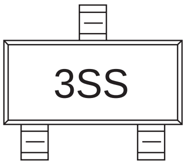
NPN Darlington Transistors

FEATURES

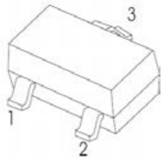
- High Current Gain

MARKING: 3SS



3SS = Device code

SOT－23

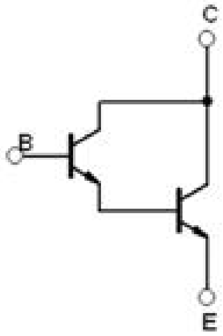


1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS (T_a=25℃ 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	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

Equivalent Circuit



ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

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

*Pulse test: pulse width Ò300εs,duty cycleÒ2.0%.

Typical Characteristics