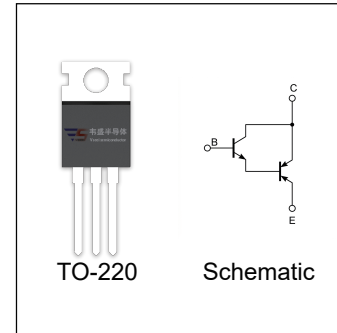


TIP142 Darlington Transistor (NPN)

FEATURES

- Monolithic Darlington Configuration
- Integrated Antiparallel Collector-Emitter Diode



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	10	A
P_C	Collector Power Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10mA, I_E=0$	100			V
Collector-emitter sustaining voltage	$V_{CEO(sus)}^*$	$I_C=30mA, I_B=0$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10mA, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=100V, I_E=0$			1	mA
Collector cut-off current	I_{CEO}	$V_{CE}=50V, I_C=0$			2	mA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			2	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=4V, I_C=5A$	1000		12000	
	$h_{FE(2)}$	$V_{CE}=4V, I_C=10A$	500			
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	$I_C=5A, I_B=10mA$			2	V
	$V_{CE(sat)(2)}$	$I_C=10A, I_B=40mA$			3	V
Base-emitter voltage	V_{BE}	$V_{CE}=4V, I_C=10A$			3	V

*Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$.

Static Characteristic
