

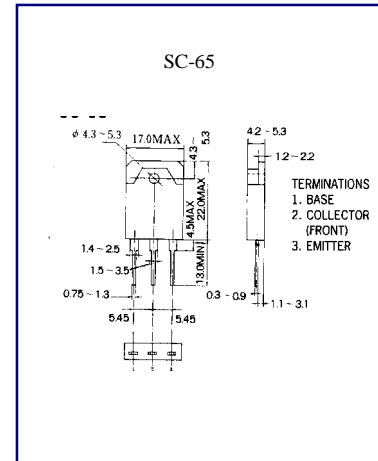


TIP145/146/147

# PNP EPITAXIAL SILICON DARLINGTON TRANSISTOR

## HIGH DC CURRENT GAIN

•Complementary to TIP140/141/142



## ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage :TIP145	$V_{CB0}$	-60	V
:TIP146		-80	V
:TIP147	$V_{CEO}$	-100	V
Collector-Emitter Voltage :TIP140		-60	V
:TIP146		-80	V
:TIP147	$V_{EBO}$	-100	V
Emitter-Base voltage	$V_{EB0}$	-5	V
Collector Current (DC)	$I_C$	-10	A
Collector Current (Pulse)	$I_B$	-15	A
Base Current (DC)	$I_C$	-0.5	A
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	125	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-50~150	$^\circ\text{C}$

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## ELECTRICAL CHARACTERISTICS (Ta=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Emitter Sustaining Voltage :TIP145	V <sub>CEO(SUS)</sub>	I <sub>C</sub> =-30mA, I <sub>B</sub> =0	60			V
:TIP146			80			V
:TIP147			100			V
Collector Cutoff Current :TIP145	I <sub>CEO</sub>	V <sub>CE</sub> = -30V, I <sub>B</sub> =0			2	mA
:TIP146					2	mA
:TIP147					2	mA
Collector Cutoff Current :TIP145	I <sub>CBO</sub>	V <sub>CB</sub> = -60V, I <sub>E</sub> =0			1	mA
:TIP146					1	mA
:TIP147					1	mA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> =0			2	mA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =- 4V, I <sub>C</sub> =-5A	1000			
			500			
Collector- Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-5A, I <sub>B</sub> =-10mA			2	V
		I <sub>C</sub> =-10A, I <sub>B</sub> =-40mA			3	V
Base- Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10A, I <sub>B</sub> =-40mA			3.5	V
Base- Emitter On Voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> = -4V, I <sub>C</sub> =-10A			3	V
Delay Time	t <sub>d</sub>	V <sub>CC</sub> = -30V, I <sub>C</sub> =-5A		0.15		μS
Rise Time	t <sub>r</sub>	I <sub>B</sub> =-20mA I <sub>B1</sub> = I <sub>B2</sub>		0.55		μS
Storage Time	t <sub>s</sub>			2.5		μS
Fall Time	t <sub>f</sub>			2.5		μS