

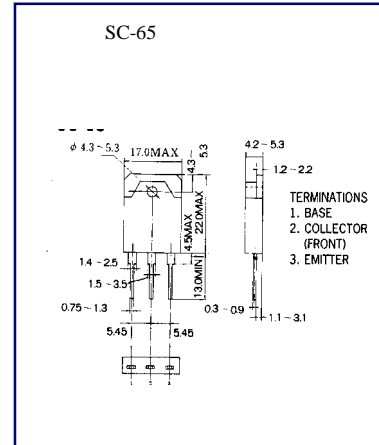


# TIP140/141/142

# NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

## HIGH DC CURRENT GAIN

•Complementary to TIP145/146/147



## ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage :TIP140	VCBO	60	V
TIP141		80	V
TIP142		100	V
Collector-Emitter Voltage :TIP140	VCEO	60	V
TIP141		80	V
TIP142		100	V
Emitter-Base voltage	VEBO	5	V
Collector Current (DC)	IC	10	A
Collector Current (Pulse)		15	A
Base Current (DC)	IB	0.5	A
Collector Dissipation (Tc=25°C)	PC	125	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-50~150	°C

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## ELECTRICAL CHARACTERISTICS (Ta=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Emitter Sustaining Voltage :TIP140	V <sub>CEO(SUS)</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =0	60			V
:TIP141			80			V
:TIP142			100			V
Collector Cutoff Current :TIP140	I <sub>CEO</sub>	V <sub>CE</sub> = 30V , I <sub>B</sub> =0			2	mA
:TIP141					2	mA
:TIP142					2	mA
Collector Cutoff Current :TIP140	I <sub>CBO</sub>	V <sub>CB</sub> = 60V , I <sub>E</sub> =0			1	mA
:TIP141					1	mA
:TIP142					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			
		V <sub>CE</sub> = 4V , I <sub>C</sub> =10A	500			
Collector- Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =5A ,			2	V
		I <sub>B</sub> =10mA			3	V
Base- Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10A ,			3.5	V
Base- Emitter On Voltage	V <sub>BE(on)</sub>	I <sub>B</sub> =40mA			3	V
Delay Time	t <sub>d</sub>	I <sub>C</sub> =10A ,		0.15		μS
Rise Time	t <sub>r</sub>	I <sub>B</sub> =40mA		0.55		μS
Storage Time	t <sub>s</sub>	V <sub>CE</sub> = 4V ,		2.5		μS
Fall Time	t <sub>f</sub>	I <sub>C</sub> =10A		2.5		μS
		V <sub>CC</sub> = 30V , I <sub>C</sub> =5A				
		I <sub>B</sub> =20mA I <sub>B1</sub> = I <sub>B2</sub>				