

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

TIP140 TIP141 TIP142 NPN
TIP145 TIP146 TIP147 PNP

SILICON POWER DARLINGTON
COMPLEMENTARY TRANSISTORS

JEDEC TO-218 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP140, TIP145 series types are Complementary Silicon Power Darlington Transistors manufactured by the epitaxial base process, designed for general purpose amplifier and low speed switching applications where high gain (h_{FE}) is required.

MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)

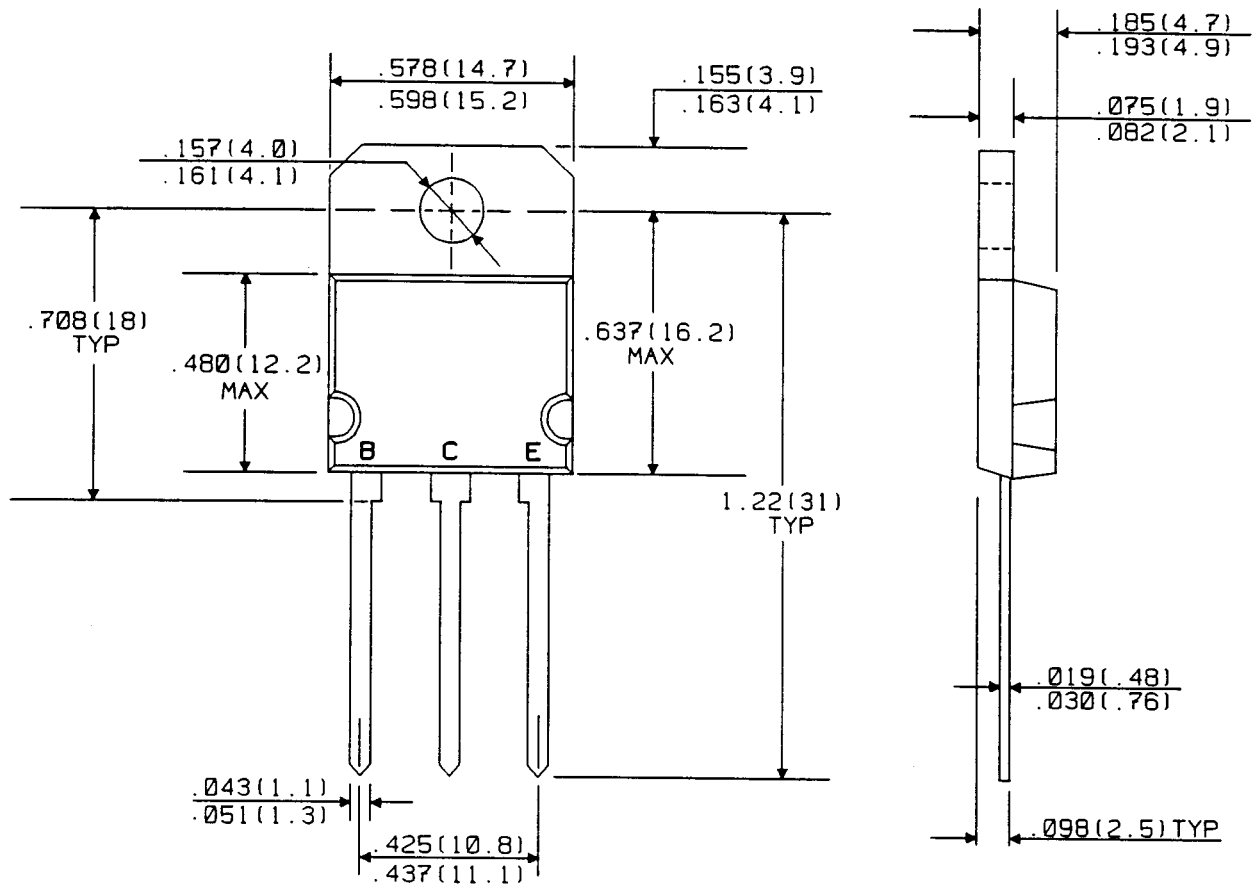
	SYMBOL	TIP140 TIP145	TIP141 TIP146	TIP142 TIP147	UNITS
Collector-Base Voltage	V_{CBO}	60	80	100	V
Collector-Emitter Voltage	V_{CEO}	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0	5.0	5.0	V
Collector Current	I_C		10		A
Collector Current (Peak)	I_{CM}		20		A
Base Current	I_B		0.5		A
Power Dissipation	P_D		125		W
Operating and Storage					
Junction Temperature	T_J, T_{stg}		-65 to +150		$^\circ\text{C}$
Thermal Resistance	θ_{JC}		1.0		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	TIP140 TIP145		TIP141 TIP146		TIP142 TIP147		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB} = \text{Rated } V_{CBO}$		1.0		1.0		1.0	mA
I_{CEO}	$V_{CE} = \frac{1}{2} \text{ Rated } V_{CEO}$		2.0		2.0		2.0	mA
I_{EBO}	$V_{BE} = 5.0\text{V}$		2.0		2.0		2.0	mA
BV_{CEO}	$I_C = 30\text{mA}$	60		80		100		V
$V_{CE(SAT)}$	$I_C = 5.0\text{A}, I_B = 10\text{mA}$		2.0		2.0		2.0	V
$V_{CE(SAT)}$	$I_C = 10\text{A}, I_B = 40\text{mA}$		3.0		3.0		3.0	V
$V_{BE(ON)}$	$V_{CE} = 4.0\text{V}, I_C = 10\text{A}$		3.0		3.0		3.0	V
h_{FE}	$V_{CE} = 4.0\text{V}, I_C = 5.0\text{A}$	1000		1000		1000		
h_{FE}	$V_{CE} = 4.0\text{V}, I_C = 10\text{A}$	500		500		500		
t_{on}	$I_C = 10\text{A}, I_{B1} = -I_{B2} = 40\text{mA}, R_L = 3.0\Omega$		0.9TYP		0.9TYP		0.9TYP	μs
t_{off}	$I_C = 10\text{A}, I_{B1} = -I_{B2} = 40\text{mA}, R_L = 3.0\Omega$		4.0TYP		4.0TYP		4.0TYP	μs

(Mechanical Outline on Reverse Side)

All Dimensions in Inches (mm).



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