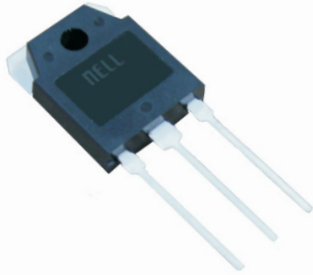


## Silicon NPN triple diffusion planar transistor 10A/140V/100W



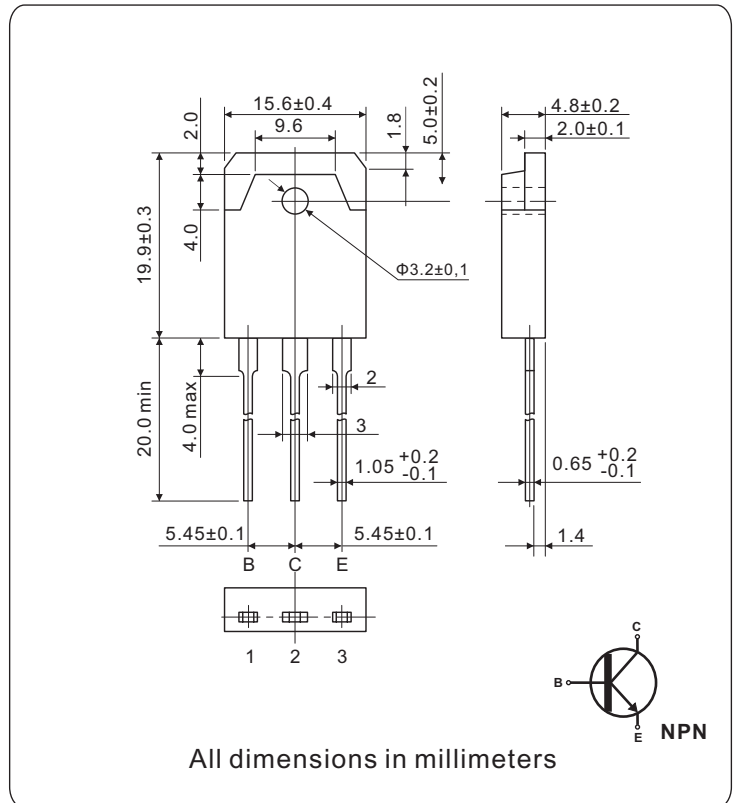
TO-3P(B)

### FEATURES

- High breakdown voltage,  $V_{CE0} = 140V$  (min)
- Complementary to 2SA1941B
- TO-3P package which can be installed to the heat sink with one screw

### APPLICATIONS

- Suitable for use in 70W high fidelity audio amplifier's output stage



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector to base voltage	140	V
$V_{CEO}$	Collector to emitter voltage	140	
$V_{EBO}$	Emitter to base voltage	5	
$I_{CP}$	Peak collector current $t_p \leq 5$ ms	20	A
$I_C$	Collector current	10	
$I_B$	Base current	1	
$P_C$	Collector power dissipation	$T_C = 25^\circ C$ 100	W
$T_j$	Junction temperature	150	$^\circ C$
$T_{stg}$	Storage temperature	-55 to 150	

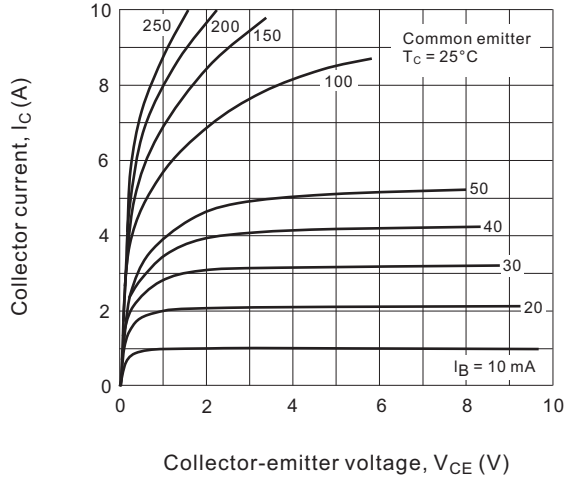
### THERMAL CHARACTERISTICS ( $T_C = 25^\circ C$ )

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-c)}$	Thermal resistance, junction to case	1.55	$^\circ C/W$

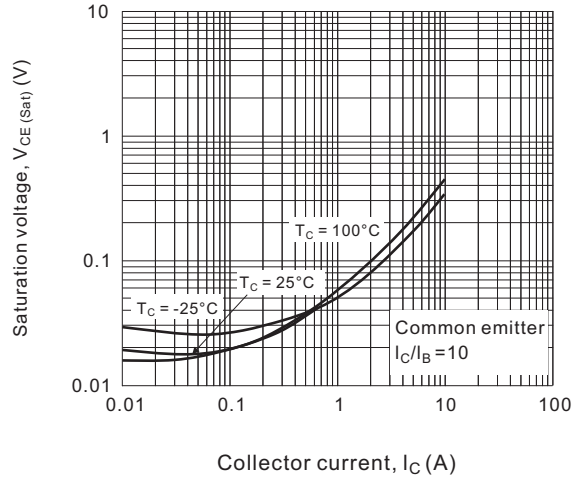
ELECTRICAL CHARACTERISTICS (T <sub>a</sub> = 25°C)						
SYMBOL	PARAMETER	CONDITIONS	VALUE			UNIT
			MIN.	TYP.	MAX.	
I <sub>CBO</sub>	Collector cutoff current	V <sub>CB0</sub> = 140V, I <sub>E</sub> = 0			5.0	μA
I <sub>EBO</sub>	Emitter cutoff current	V <sub>EBO</sub> = 5V, I <sub>C</sub> = 0			5.0	
V <sub>(BR)CEO</sub>	Collector to emitter breakdown voltage	I <sub>CEO</sub> = 50mA, I <sub>B</sub> = 0	140			V
V <sub>CB0</sub>	Collector to base voltage	I <sub>CB0</sub> = 5 μA	140			
V <sub>EBO</sub>	Emitter to base voltage	I <sub>EBO</sub> = 5.0 μA	5			
h <sub>FE1</sub>	Forward current transfer ratio (DC current gain)	V <sub>CE</sub> = 5V, I <sub>C</sub> = 1A	Rank-R	55		110
h <sub>FE2</sub>			Rank-O	80		160
		V <sub>CE</sub> = 5V, I <sub>C</sub> = 5A	35	83		
V <sub>CE(sat)</sub>	Collector to emitter saturation voltage	I <sub>C</sub> = 7A, I <sub>B</sub> = 0.7A		0.3	2.0	V
V <sub>BE</sub>	Base to emitter voltage	V <sub>CE</sub> = 5V, I <sub>C</sub> = 5A		0.9	1.5	
f <sub>T</sub>	Transition frequency (Gain-Bandwidth product)	V <sub>CE</sub> = 5V, I <sub>C</sub> = 1A		30		MHz
C <sub>ob</sub>	Collector output capacitance	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz		170		pF

ORDERING INFORMATION SCHEME	
<b>2SC 5198 B - R</b>	
<b>Transistor series</b> NPN Type	2SC
<b>Current &amp; Voltage rating, I<sub>C</sub> &amp; V<sub>CEO</sub></b> 10A / 140V	5198
<b>Package type</b> B = TO-3PB	B
<b>DC current gain rank, h<sub>FE1</sub></b> R = 55 ~ 110 O = 80 ~ 160	R

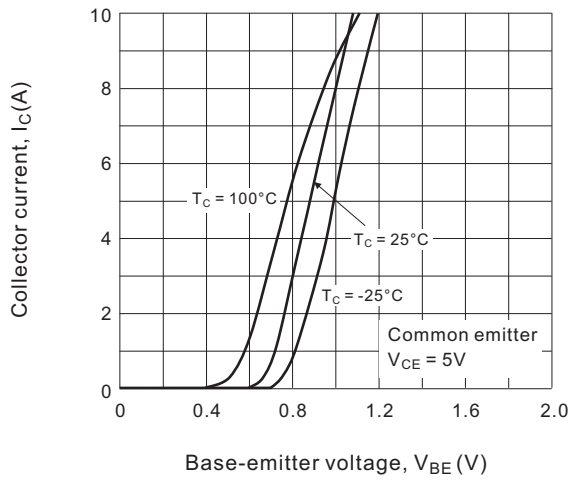
**Fig.1 Collector output characteristics**



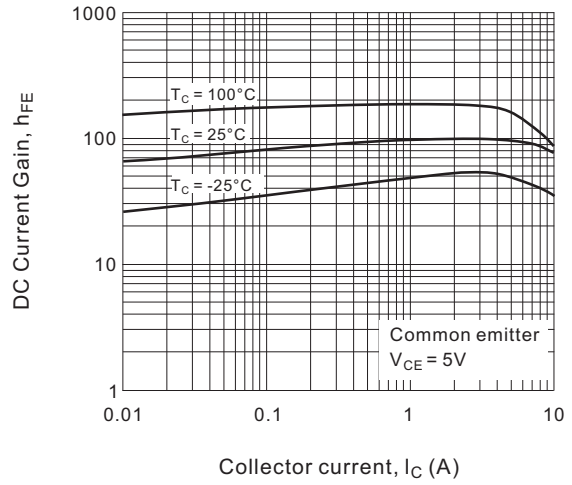
**Fig.2 Collector-Emitter saturation voltage**



**Fig.3  $I_C$ - $V_{BE}$  characteristics**



**Fig.4 DC current gain**



**Fig.5 Safe operating area**

