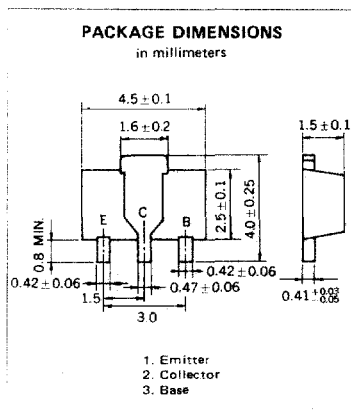


NPN SILICON EPITAXIAL TRANSISTOR  
POWER MINI MOLD

## DESCRIPTION

2SC3618 is designed for audio frequency power amplifier and switching application, especially in Hybrid Integrated Circuits.



## FEATURE

- World Standard Miniature Package

## ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ( $T_a = 25^\circ\text{C}$ )

Collector to Base Voltage	$V_{CB0}$	25	V
Collector to Emitter Voltage	$V_{CE0}$	25	V
Emitter to Base Voltage	$V_{EB0}$	15	V
Collector Current (DC)	$I_C$	0.7	A
Collector Current (Pulse)*	$I_C$	1.0	A

Maximum Power Dissipation

Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature**	$P_T$	2.0	W
--	-------	-----	---

Maximum Temperatures

Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\* $PW \leq 10$  ms, Duty Cycle  $\geq 50$  %

\*\*When mounted on ceramic substrate of  $16\text{ cm}^2 \times 0.7\text{ mm}$

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			100	nA	$V_{CB} = 25\text{ V}, I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB} = 10\text{ V}, I_C = 0$
DC Current Gain	$h_{FE1}$ ***	800		3200		$V_{CE} = 2.0\text{ V}, I_C = 300\text{ mA}$
DC Current Gain	$h_{FE2}$ ***	640				$V_{CE} = 2.0\text{ V}, I_C = 500\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}$ ***		0.16	0.3	V	$I_C = 300\text{ mA}, I_B = 3.0\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}$ ***		0.75	1.2	V	$I_C = 300\text{ mA}, I_B = 3.0\text{ mA}$
Gain Bandwidth Product	$f_T$	150	250		MHz	$V_{CE} = 5.0\text{ V}, I_E = -300\text{ mA}$
Output Capacitance	$C_{ob}$		10		pF	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$

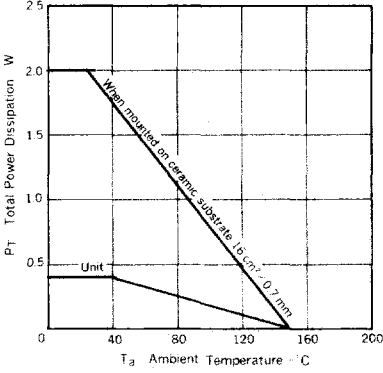
\*\*\*Pulsed:  $PW \leq 350\text{ }\mu\text{s}$ , Duty Cycle  $\leq 2$  %

 $h_{FE}$  Classification

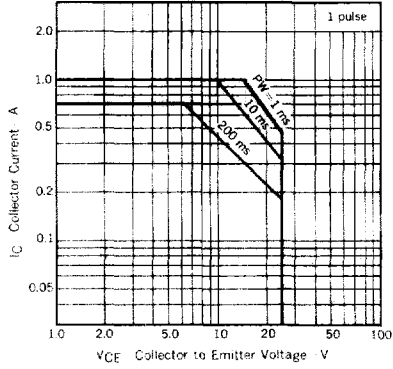
MARKING	UM	UL	UK
$h_{FE}$	800 to 1600	1200 to 2400	2000 to 3200

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

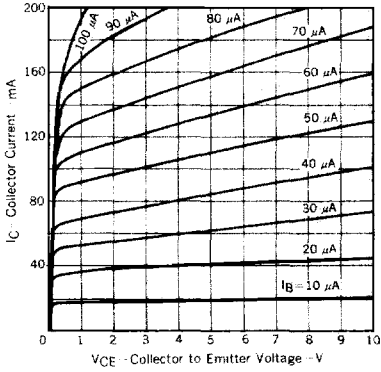
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



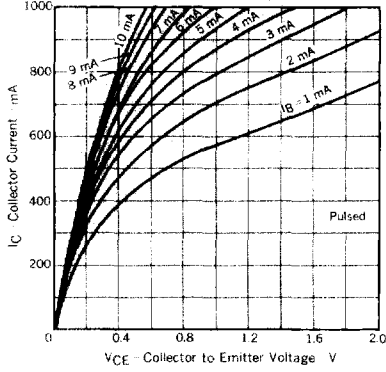
SAFE OPERATING AREA



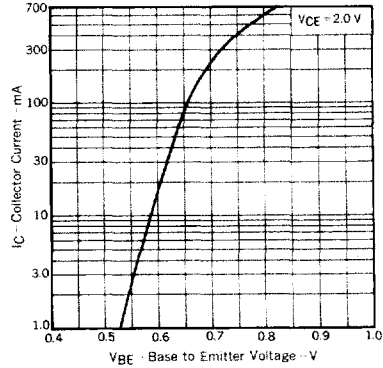
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



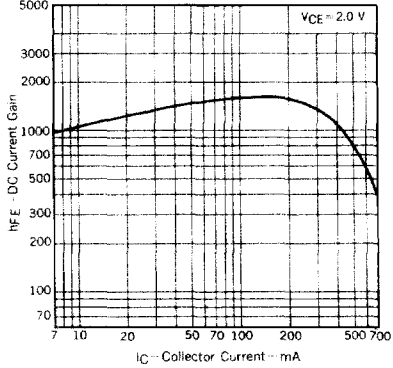
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



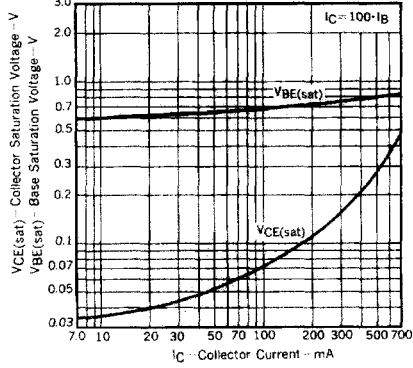
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



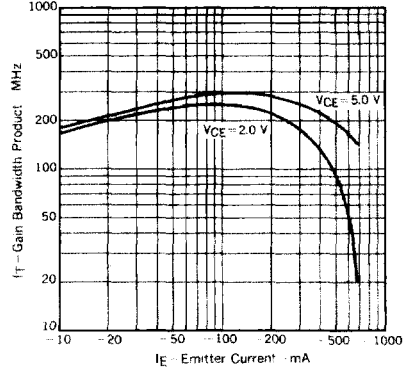
DC CURRENT GAIN vs. COLLECTOR CURRENT



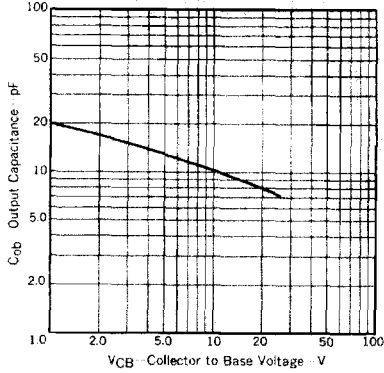
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



SWITCHING TIME vs. COLLECTOR CURRENT

