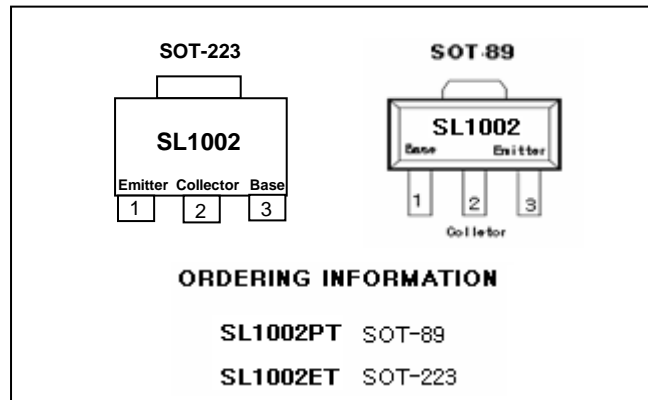


# Audio Frequency Power Amplifier

**SL1002**

## Features

- Low Speed Switching



## NPN Epitaxial Silicon Transistor

**Absolute Maximum Ratings**  $T_c=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Value	Units
VCBO	Collector-Base Voltage	40	V
VCEO	Collector-Emitter Voltage	30	V
VEBO	Emitter-Base Voltage	5	V
IC	Collector Current (DC)	3	A
ICP	*Collector Current (Pulse)	7	A
IB	Base Current (DC)	0.6	A
PC	Collector Dissipation (TC=25°C)	10	W
Rθja	Junction to Ambient	132	°C/W
Rθjc	Junction to Case	13.5	°C/W
TJ	Junction Temperature	150	°C
TSTG	Storage Temperature	- 55 ~ 150	°C

\*  $PW \leq 10\text{ms}$ , Duty Cycle  $\leq 50\%$

**Electrical Characteristics**  $T_c=25^\circ\text{C}$  unless otherwise noted

Characteristics	Symbol	Unit	Measurement Mode	Min	Max
DC Current Gain (1), (2)	$h_{FE}$		$V_{ce} = 2\text{V}$ , $I_c = 20\text{mA}$	30	
DC Current Gain (1), (2)	$h_{FE}$		$V_{ce} = 2\text{V}$ , $I_c = 1\text{A}$	60	400
Collector Cut-off Current	$I_{cbo}$	$\mu\text{A}$	$V_{cb} = 30\text{V}$ , $I_e = 0$		1.0
Collector Cut-off Current	$I_{cbo}$	$\mu\text{A}$	$V_{cb} = 40\text{V}$ , $I_e = 0$		100
Emitter Cut-off Current	$I_{ebo}$	$\mu\text{A}$	$V_{eb} = 3\text{V}$ , $I_c = 0$		1.0
Emitter Cut-off Current	$I_{ebo}$	$\mu\text{A}$	$V_{eb} = 5\text{V}$ , $I_c = 0$		100
Collector-Emitter Saturation Voltage (1)	$V_{ce(sat)}$	V	$I_c = 2\text{A}$ , $I_b = 0.2\text{A}$		0.5
			$I_c = 0.8\text{A}$ , $I_b = 0.02\text{A}$		0.1
Base-Emitter Saturation Voltage (1)	$V_{be(sat)}$	V	$I_c = 2\text{A}$ , $I_b = 0.2\text{A}$		2.0

(1) Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

(2) Measurement mode for a network with common base :  $V_{cb} = 1\text{V}$ ,  $I_e = I_c$

\* Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

Typical Characteristics (Continued)

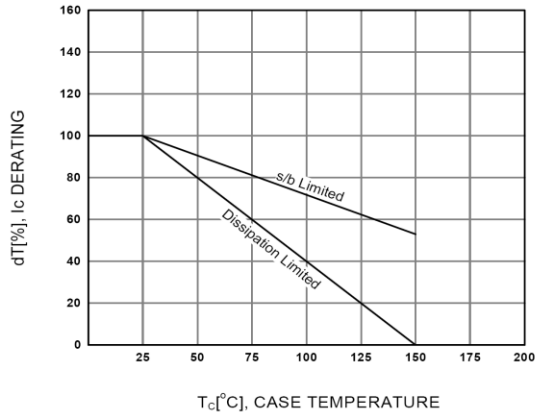


Figure 7. Derating Curve of Safe Operating Areas

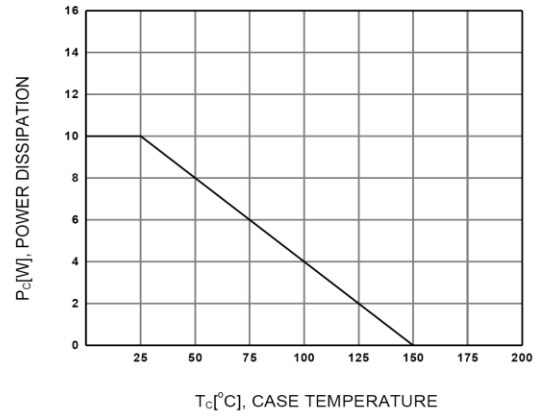
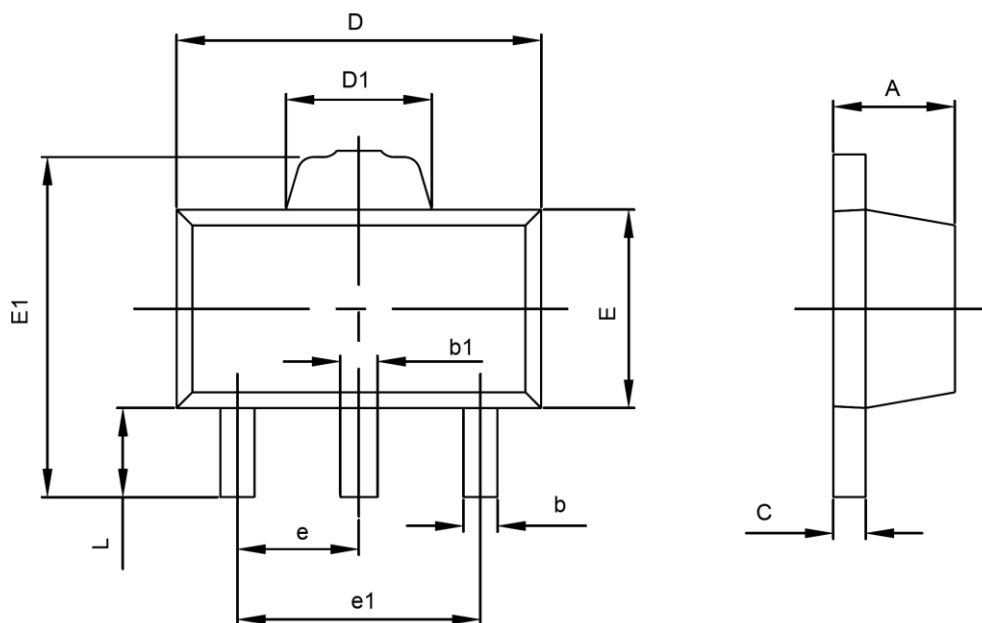


Figure 8. Power Derating

## SOT-89-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043

SOT-223

