

SILICON TRANSISTOR

2SD1614

NPN SILICON EPITAXIAL TRANSISTOR

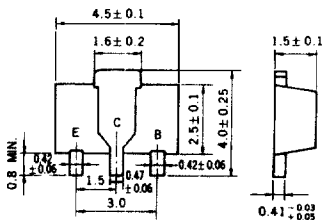
POWER MINI MOLD

DESCRIPTION

2SD1614 is designed for audio frequency power amplifier and switching application, especially in Hybrid Integrated Circuits.

PACKAGE DIMENSIONS

in millimeters



1. Emitter
2. Collector
3. Base

FEATURES

- World Standard Miniature Package
- High DC Current Gain : h_{FE} 135 to 600
- Low $V_{CE(sat)}$: $V_{CE(sat)} = 0.2$ V
- Complement to 2SB1114

ABSOLUTE MAXIMUM RATINGS

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

Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current (DC)	I_C	2	A
Collector Current (Pulse)*	I_C	3	A

Maximum Power Dissipation

Total Power Dissipation at 25°C Ambient Temperature**	P_T	2.0	W
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Maximum Temperatures

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

*PW ≤ 10 ms, Duty Cycle $\leq 50\%$

**When mounted on ceramic substrate of $2.5\text{ cm}^2 \times 0.7\text{ mm}$

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

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CB} = 30\text{ V}, I_E = 0$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB} = 6.0\text{ V}, I_C = 0$
DC Current Gain	h_{FE1}^{***}	135	350	600		$V_{CE} = 2.0\text{ V}, I_C = 100\text{ mA}$
DC Current Gain	h_{FE2}^{***}	40				$V_{CE} = 2.0\text{ V}, I_C = 2.0\text{ A}$
Collector Saturation Voltage	$V_{CE(sat)}^{***}$		0.3	0.5	V	$I_C = 2.0\text{ A}, I_B = 50\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^{***}$		0.95	1.2	V	$I_C = 2.0\text{ A}, I_B = 50\text{ mA}$
Base to Emitter Voltage	V_{BE}^{***}	650	680	750	mV	$V_{CE} = 6.0\text{ V}, I_C = 100\text{ mA}$
Gain Bandwidth Product	f_T		200		MHz	$V_{CE} = 10\text{ V}, I_E = -50\text{ mA}$
Output Capacitance	C_{ob}		28		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	XM	XL	XK
h_{FE}	135 to 270	200 to 400	300 to 600

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

