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Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Not recommended
for new design

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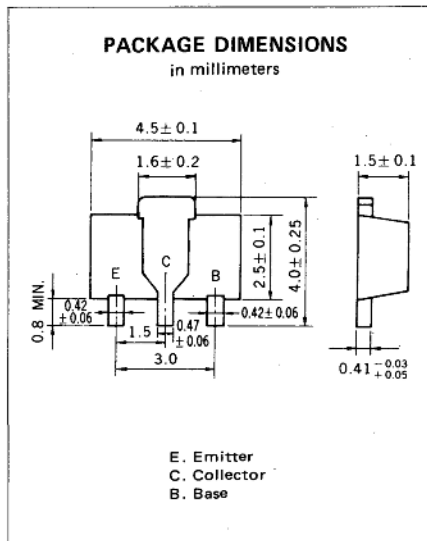
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NPN SILICON EPITAXIAL TRANSISTOR
POWER MINI MOLD

DESCRIPTION

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



FEATURES

- 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 ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CB0}	40	V
Collector to Emitter Voltage	V_{CE0}	20	V
Emitter to Base Voltage	V_{EB0}	6.0	V
Collector Current (DC)	$I_C(\text{DC})$	2.0	A
Collector Current (Pulse)*	$I_C(\text{Pulse})$	3.0	A
Total Power Dissipation**	P_T	2.0	W
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 $\leq 50\%$

**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_{CB0}			100	nA	$V_{CB} = 30\text{ V}, I_E = 0$
Emitter Cutoff Current	I_{EB0}			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	250			$V_{CE} = 2.0\text{ V}, I_C = 2.0\text{ A}$
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 $\leq 2\%$

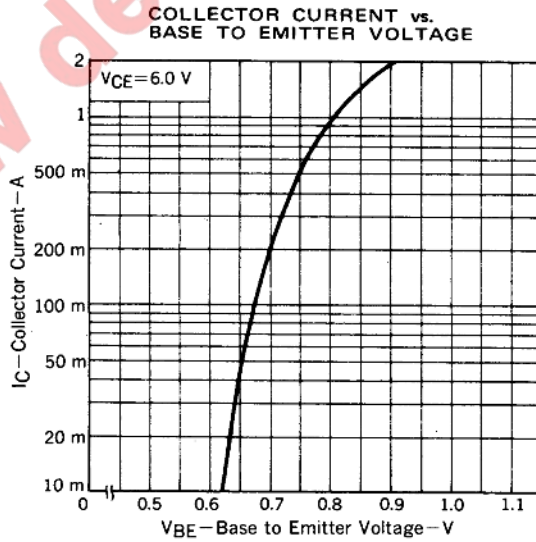
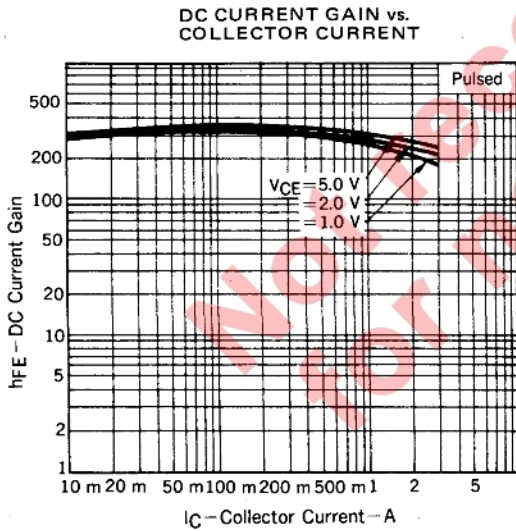
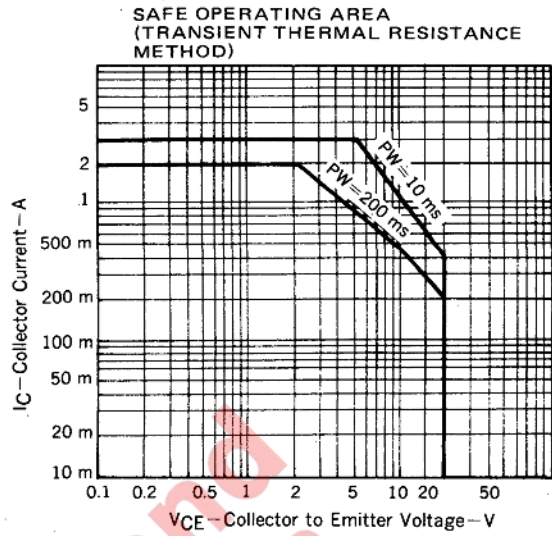
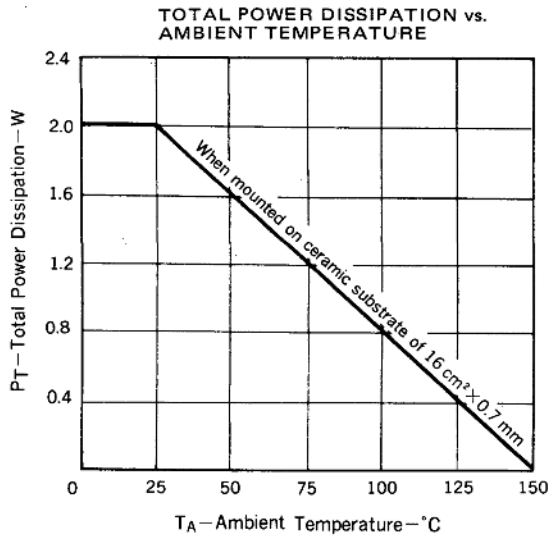
h_{FE} Classification

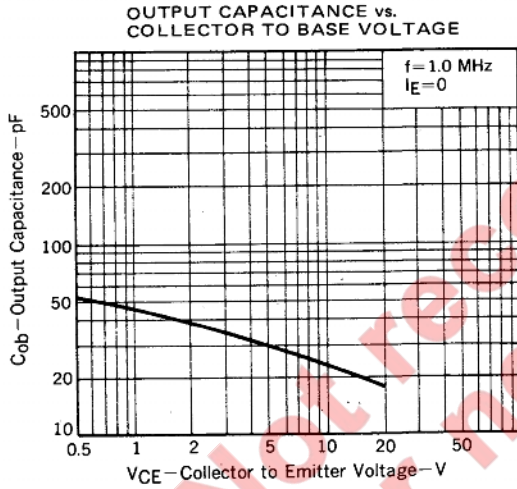
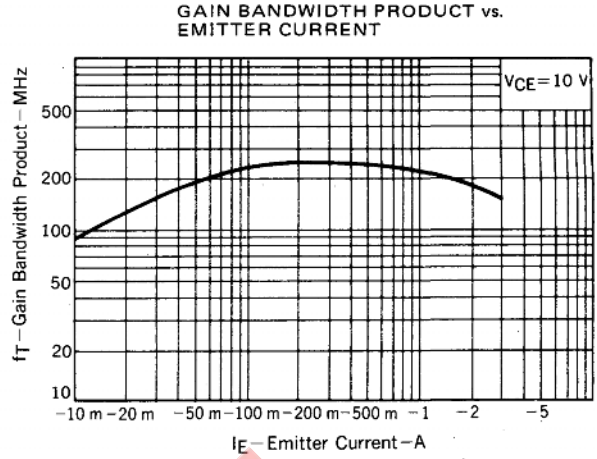
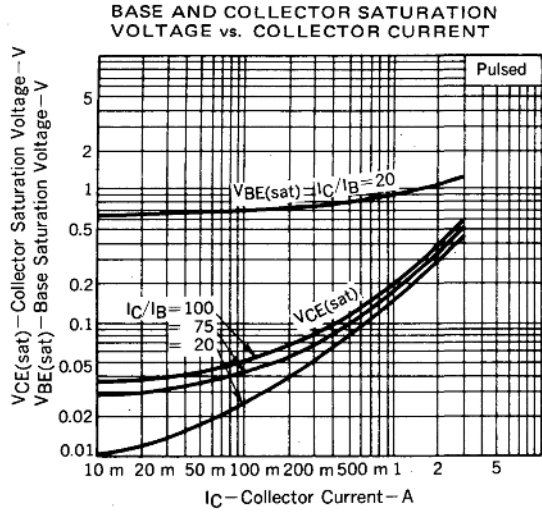
MARKING	XM	XL	XK
h_{FE1}	135 to 270	200 to 400	300 to 600

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