

To our customers,

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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NPN SILICON POWER TRANSISTOR

DESCRIPTION

The 2SD882 is NPN silicon transistor suited for the output stage of 3 watts audio amplifier, voltage regulator, DC-DC converter and relay driver.

FEATURES

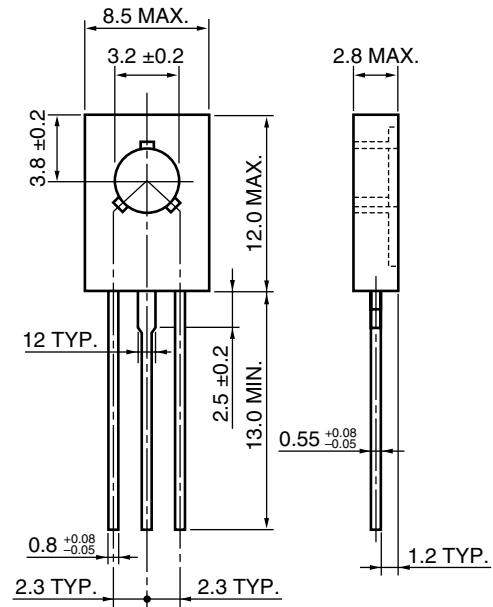
- Low saturation voltage
 $V_{CE(sat)} = 0.5 \text{ V MAX.}$ ($I_c = -2 \text{ A}$, $I_B = 0.2 \text{ A}$)
- Excellent h_{FE} linearity and high h_{FE}
 $h_{FE} = 60 \text{ to } 400$ ($V_{CE} = 2 \text{ V}$, $I_c = 1 \text{ A}$)
- Less cramping space required due to small and thin package and reducing the trouble for attachment to a radiator.
No insulator bushing required.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperature	
Storage Temperature	-55 to +150°C
Junction Temperature	150°C Maximum
Maximum Power Dissipations	
Total Power Dissipation ($T_A = 25^\circ\text{C}$)	1.0 W
Total Power Dissipation ($T_C = 25^\circ\text{C}$)	10 W
Maximum Voltages and Currents ($T_A = 25^\circ\text{C}$)	
V_{CBO} Collector to Base Voltage	40 V
V_{CEO} Collector to Emitter Voltage	30 V
V_{EBO} Emitter to Base Voltage	5.0 V
$I_{C(DC)}$ Collector Current (DC)	3.0 A
$I_{C(pulse)}$ ^{Note} Collector Current (pulse)	7.0 A

Note Pulse Test $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

★ PACKAGE DRAWING (Unit: mm)



- 1: Emitter
- 2: Collector: connected to mounting plane
- 3: Base

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

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
DC Current Gain	h_{FE1}	$V_{CE} = 2.0 \text{ V}$, $I_c = 20 \text{ mA}$ ^{Note}	30	150		
DC Current Gain	h_{FE2}	$V_{CE} = 2.0 \text{ V}$, $I_c = 1.0 \text{ A}$ ^{Note}	60	160	400	
Gain Bandwidth Product	f_T	$V_{CE} = 5.0 \text{ V}$, $I_c = 0.1 \text{ A}$		90		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$		45		pF
Collector Cutoff Current	I_{CBO}	$V_{CB} = 30 \text{ V}$, $I_E = 0 \text{ A}$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 3.0 \text{ V}$, $I_c = 0 \text{ A}$			1.0	μA
Collector Saturation Voltage	$V_{CE(sat)}$	$I_c = 2.0 \text{ A}$, $I_B = 0.2 \text{ A}$ ^{Note}		0.3	0.5	V
Base Saturation Voltage	$V_{BE(sat)}$	$I_c = 2.0 \text{ A}$, $I_B = 0.2 \text{ A}$ ^{Note}		1.0	2.0	V

Note Pulse Test: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

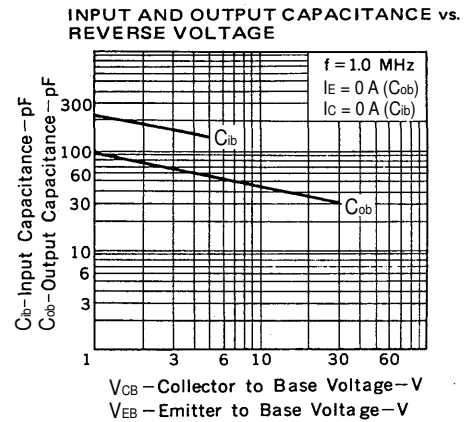
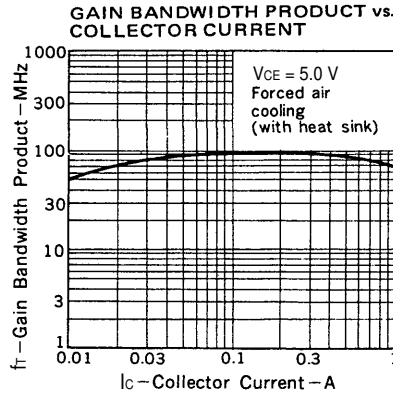
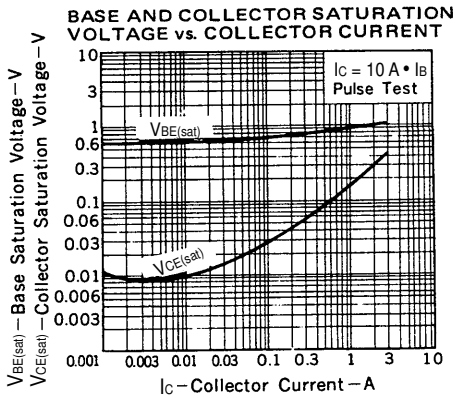
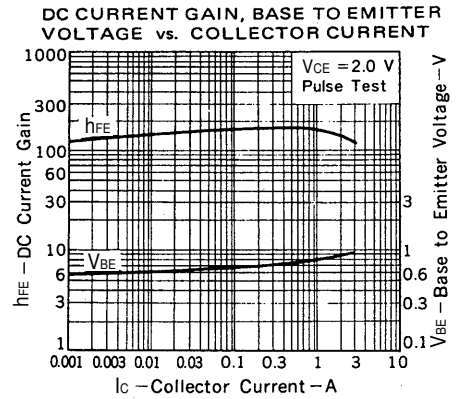
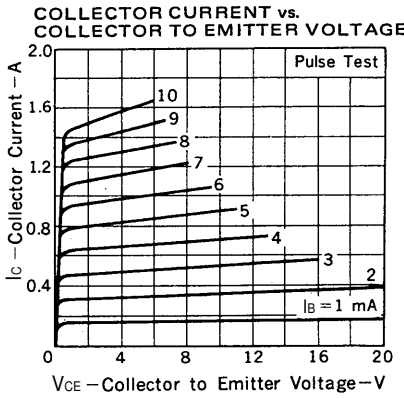
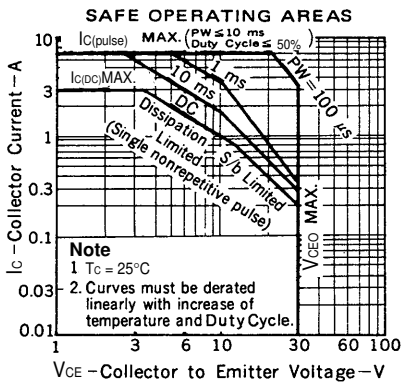
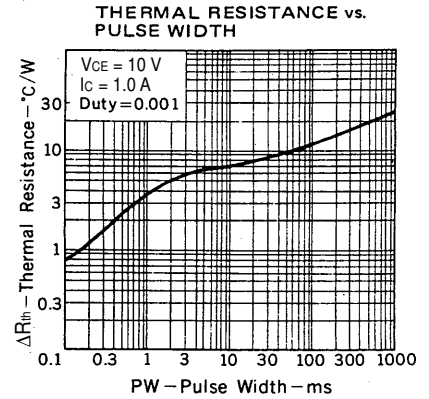
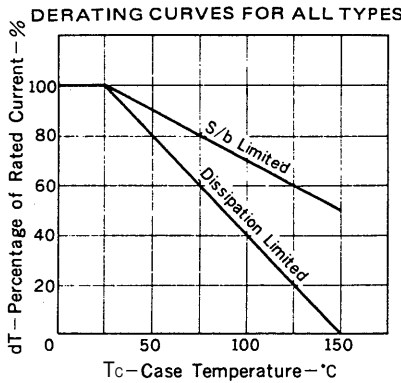
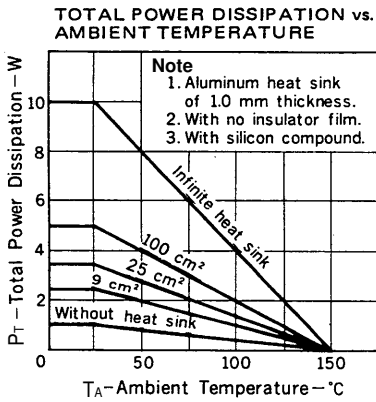
CLASSIFICATION OF h_{FE}

Rank	R	Q	P	E
Range	60 to 120	100 to 200	160 to 320	200 to 400

Remark Test Conditions: $V_{CE} = 2.0 \text{ V}$, $I_c = 1.0 \text{ A}$

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