

NEC

NPN SILICON DARLINGTON POWER TRANSISTOR 2SD1630

DESCRIPTION

The 2SD1630 is a darlington transistor built-in a zener diode at B-C and a dumper diode at E-C.

It is suitable for use to operate from IC without predriver, such as hammer driver.

FEATURES

- High DC Current Gain.
- Built-in a Zener Diode at B-C and a Dumper Diode at E-C.
- Low Collector Saturation Voltage.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to +150 °C

Junction Temperature +150 °C Maximum

Maximum Power Dissipations

Total Power Dissipation ($T_a = 25\text{ °C}$) 1.0 W

Total Power Dissipation ($T_c = 25\text{ °C}$) 10 W

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

V_{CBO} Collector to Base Voltage 60 ± 10 V

V_{CEO} Collector to Emitter Voltage 60 ± 10 V

V_{EBO} Emitter to Base Voltage 7.0 V

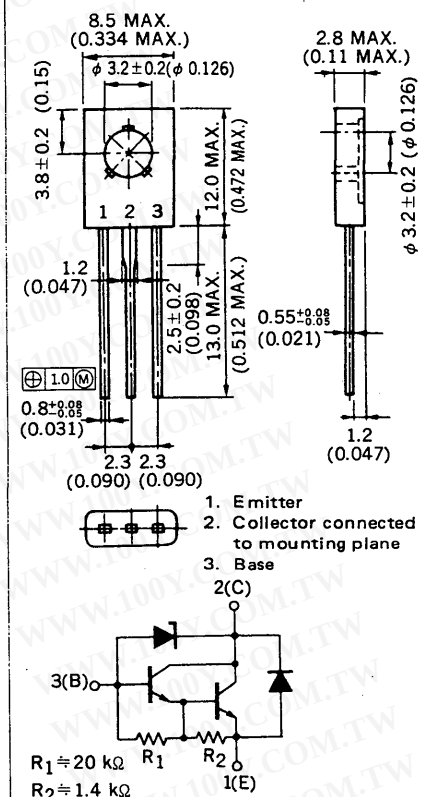
$I_{C(DC)}$ Collector Current ± 1.0 A

$I_{C(pulse)}$ Collector Current ± 2.0 A

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

PACKAGE DIMENSIONS

in millimeters (inches)



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

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1} **	DC Current Gain	1000			—	$V_{CE} = 2.0\text{ V}$, $I_C = 0.2\text{ A}$
h_{FE2} **	DC Current Gain	2000		30000	—	$V_{CE} = 2.0\text{ V}$, $I_C = 0.5\text{ A}$
V_{CBO}	Collector to Base Voltage	50	60	70	V	$I_C = 1.0\text{ mA}$, $I_E = 0$
V_{CEO}	Collector to Emitter Voltage	50	60	70	V	$I_C = 10\text{ mA}$, $R_{BE} = \infty$
t_{on}	Turn On Time		0.5		μs	$I_C = 0.5\text{ A}$, $R_L = 100\ \Omega$ $I_{B1} = -I_{B2} = 0.5\text{ mA}$, $V_{CC} = 50\text{ V}$
t_{stg}	Storage Time		1.0		μs	
t_f	Fall Time		1.0		μs	
I_{CBO}	Collector Cutoff Current			0.5	μA	$V_{CB} = 40\text{ V}$, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			1.0	mA	$V_{EB} = 5.0\text{ V}$, $I_C = 0$
$V_{CE(sat)}$ **	Collector Saturation Voltage			1.5	V	$I_C = 0.5\text{ A}$, $I_B = 0.5\text{ mA}$
$V_{BE(sat)}$ **	Base Saturation Voltage			2.0	V	$I_C = 0.5\text{ A}$, $I_B = 0.5\text{ mA}$

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

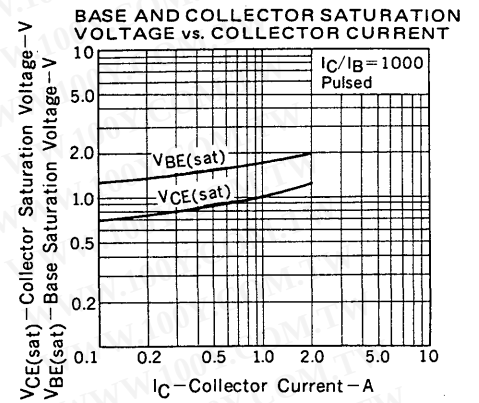
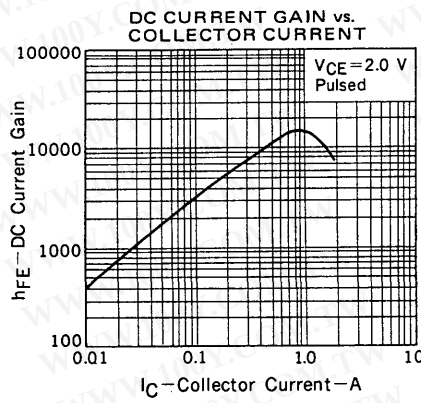
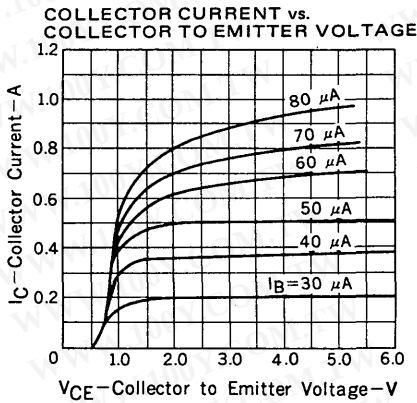
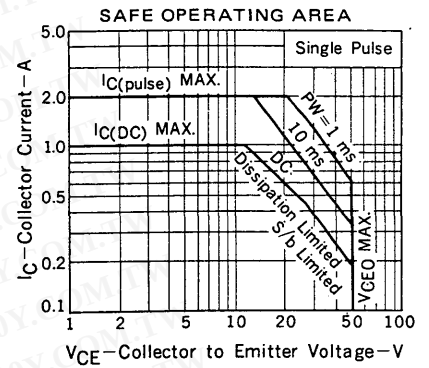
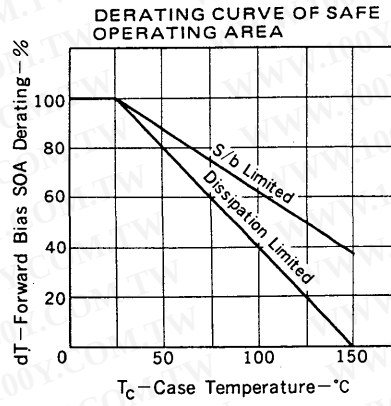
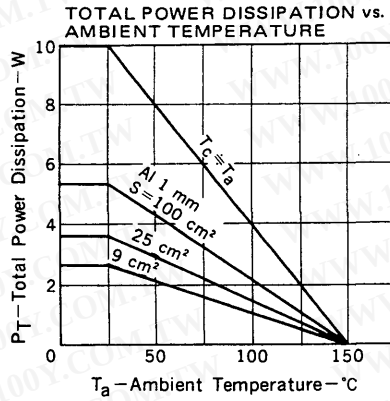
Classification of h_{FE2}

Rank	M	L	K
Range	2000 to 5000	4000 to 10000	8000 to 30000

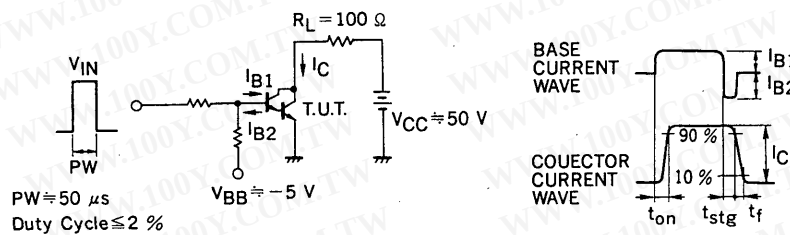
Test Conditions: $V_{CE} = 2.0\text{ V}$, $I_C = 0.5\text{ A}$

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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



SWITCHING TIME (t_{on} , t_{stg} , t_f) TEST CIRCUIT



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