

DESCRIPTION The 2SD1700 is NPN silicon epitaxial darlington transistor designed for pulse motor driver, printer driver, solenoid driver.

- FEATURES**
- High DC Current Gain
 - Zener Diode between Collector and Base for Absorbing Surge Voltage is built-in.
 - Reverse Diode between Collector and Emitter is built-in.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to +150 °C

Junction Temperature 150 °C Maximum

Maximum Power Dissipation ($T_a = 25^\circ\text{C}$)

Total Power Dissipation 1.0 W

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

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

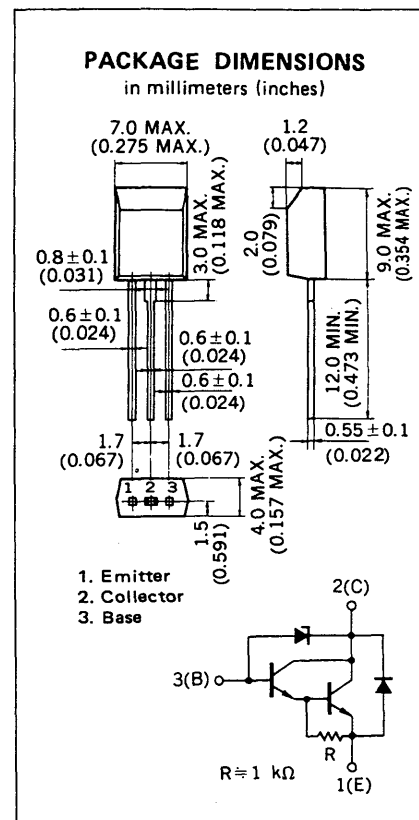
V_{CEO} Collector to Emitter Voltage . . 60±10 V

V_{EBO} Emitter to Base Voltage 8.0 V

I_C Collector Current (DC) ±0.8 A

I_C Collector Current (pulse)* ±1.2 A

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



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

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}^{**}	DC Current Gain	4000		50000		$V_{CE} = 2.0\text{ V}, I_C = 0.5\text{ A}$
h_{FE2}^{**}	DC Current Gain	1000				$V_{CE} = 2.0\text{ V}, I_C = 0.8\text{ A}$
t_{on}	Turn-on Time		0.5		μs	$I_C = 0.5\text{ A}$ $I_{B1} = -I_{B2} = 1.0\text{ mA}$ $V_{CC} = 40\text{ V}, R_L = 80\ \Omega$
t_{stg}	Storage Time		2.5		μs	
t_f	Fall-Time		1.0		μs	
$V_{CE(sat)}^{**}$	Collector Saturation Voltage		0.9	1.2	V	$I_C = 0.5\text{ A}, I_B = 1.0\text{ mA}$
$V_{BE(sat)}^{**}$	Base Saturation Voltage		1.5	2.0	V	$I_C = 0.5\text{ A}, I_B = 1.0\text{ mA}$
V_{CBO}	Collector to Base Voltage	50	60	70	V	$I_C = 0.1\text{ mA}, I_E = 0$
V_{CEO}	Collector to Emitter Voltage	50	60	70	V	$I_C = 5.0\text{ mA}, I_B = 0$
I_{CBO}	Collector Cutoff Current			1.0	μA	$V_{CB} = 40\text{ V}, I_E = 0$
I_{EBO}	Emitter Cutoff Current			1.0	μA	$V_{EB} = 5.0\text{ V}, I_C = 0$

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

Classification of h_{FE1}

Rank	L	K
Range	4000 to 12000	8000 to 50000

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

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

