DATA SHEET

DARLINGTON POWER TRANSISTOR 2SD1843

NPN SILICON EPITAXIAL TRANSISTOR (DARLINGTON CONNECTION) FOR LOW-FREQUENCY POWER AMPLIFIERS AND LOW-SPEED SWITCHING

The 2SD1843 is a Darlington connection transistor with on-chip dumper diode in collector to emitter and zener diode in collector to base. This transistor is ideal for use in acuator drives such as motors, relays, and solenoids.

FEATURES

NEC

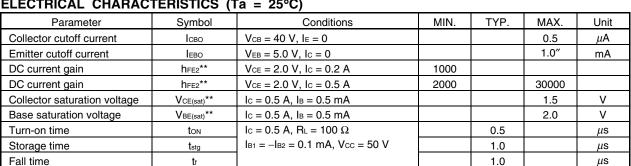
- High DC current gain due to Darlington connection
- High surge resistance due to on-chip protection elements: C to E: Dumper diode C to B: Zener diode
- Low collector saturation voltage

Parameter	Symbol	Ratings	Unit	
Collector to base voltage	Vсво	60±10	V	
Collector to emitter voltage	VCEO	60±10	V	
Emitter to base voltage	VEBO	7.0	V	
Collector current (DC)	IC(DC)	±1.0	А	
Collector current (pulse)	C(pulse)*	±2.0	А	
Total power dissipation	PT(Ta = 25°C)	1.0	W	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	–55 to +150	°C	

ABSOLUTE MAXIMUM BATINGS (Ta = 25° C)

* PW \leq 10 ms, duty cycle \leq 50%

ELECTRICAL CHARACTERISTICS (Ta = 25°C)



* *Pulse test PW \leq 350 μ s, duty cycle \leq 2%

hfe CLASSIFICATION

Marking	М	L	К
hfe2	2000 to 5000	4000 to 10000	8000 to 30000

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availability and additional information.

7.0 MAX 21 MAX. 9.6 MAX $\textbf{0.8}\pm\textbf{0.1}$ MIN 0.6+0.1 0.6 ± 0.1 0 0.6 ± 0.1 0.55 ± 0.1 Electrode Connection MAX. 1. Emitter 2. Collector 3. Base 2(C) 3 (B)

R₂

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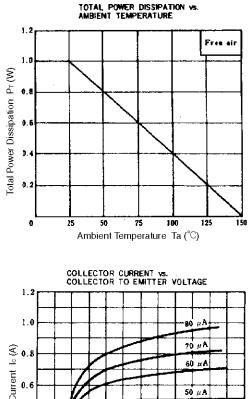
R

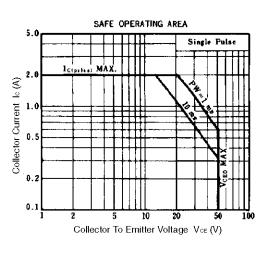
 $R_1 \approx 20 \ k\Omega$

 $R_2 \Rightarrow 1.4 k\Omega$

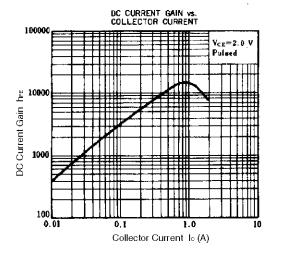
PACKAGE DRAWING (UNIT: mm)

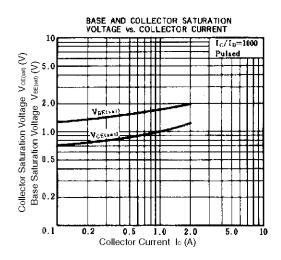
TYPICAL CHARACTERISTICS (Ta = 25°C)



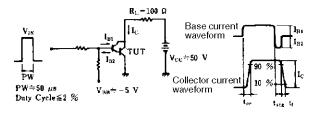


Collector Current Ic (A) 40 µA 1 = 30 #A 0.2 0 1.0 2.0 3.0 4.0 5.0 6.0 Collector To Emitter Voltage VcE (V)





SWICHING TIME (ton, tstg, tf) TEST CIRCUIT



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