

isc Silicon NPN Darlington Power Transistor

2SD1769

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 2000(\text{Min}) @ I_C = 3A$
- Collector-Emitter Sustaining Voltage-
: $V_{CE(SUS)} = 120V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 3A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

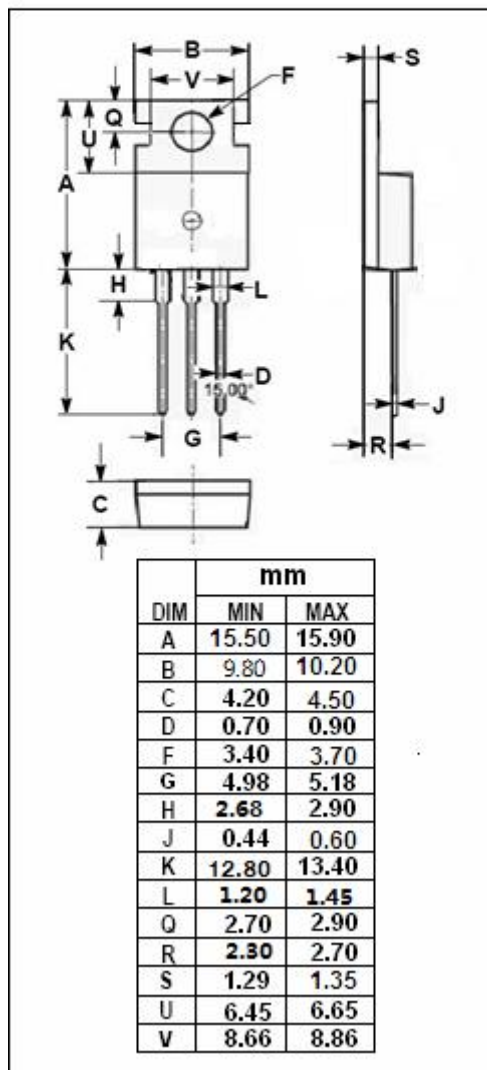
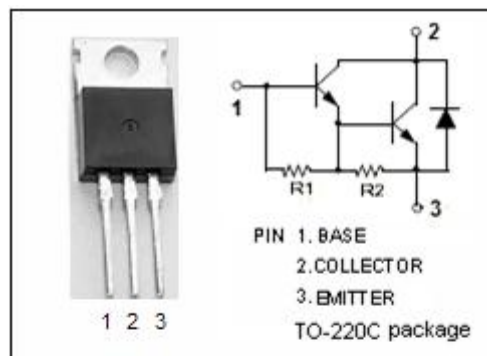


APPLICATIONS

- Designed for solenoid driver, relay and motor, series regulator, and general purpose applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	6	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation $T_C = 25^\circ\text{C}$	50	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 10mA, I _B = 0	120			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A, I _B = 3mA			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A, I _B = 3mA			2.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 120V, I _E = 0			10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C = 0			20	mA
h _{FE}	DC Current Gain	I _C = 3A; V _{CE} = 2V	2000			
f _T	Current-Gain—Bandwidth Product	I _E = 0.2A; V _{CE} = 12V		100		MHz

Switching Times

t _{on}	Turn-on Time	I _C = 3A, R _L = 10 Ω, I _{B1} = I _{B2} = 3mA, V _{CC} = 30V		0.5		μ s
t _{stg}	Storage Time			5.5		μ s
t _f	Fall Time			1.5		μ s

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