

isc Silicon NPN Darlington Power Transistor

2SD1986

DESCRIPTION

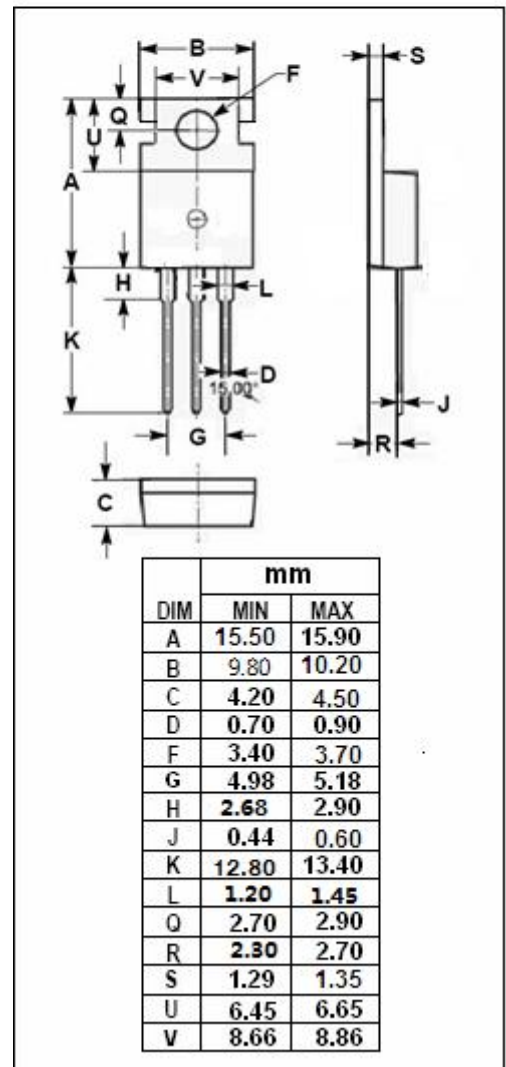
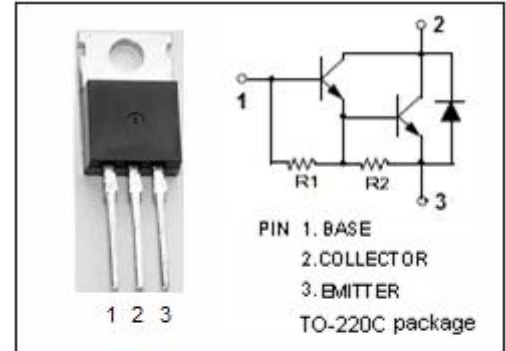
- High DC Current Gain-
: $h_{FE} = 1000(\text{Min}) @ I_C = 2A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 3A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Switching applications.
- Hammer drive, pulse motor drive applications.
- Power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	4	A
P_C	Collector Power Dissipation $T_C = 25^\circ\text{C}$	40	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

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}, I_B = 0$	60			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}, I_B = 6\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 3\text{A}, I_B = 6\text{mA}$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 60\text{V}, I_E = 0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}, I_C = 0$			3	mA
h_{FE-1}	DC Current Gain	$I_C = 0.5\text{A}, V_{CE} = 3\text{V}$	2000			
h_{FE-2}	DC Current Gain	$I_C = 2\text{A}, V_{CE} = 3\text{V}$	1000		10000	

Switching Times:

t_{on}	Turn-on Time	$V_{CC} = 30\text{V}; I_{B1} = I_{B2} = 6\text{mA}, R_L = 10\Omega$		0.2		μs
t_{stg}	Storage Time			1.5		μs
t_f	Fall Time			0.6		μs

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