

isc Silicon NPN Darlington Power Transistor

2SD1589

DESCRIPTION

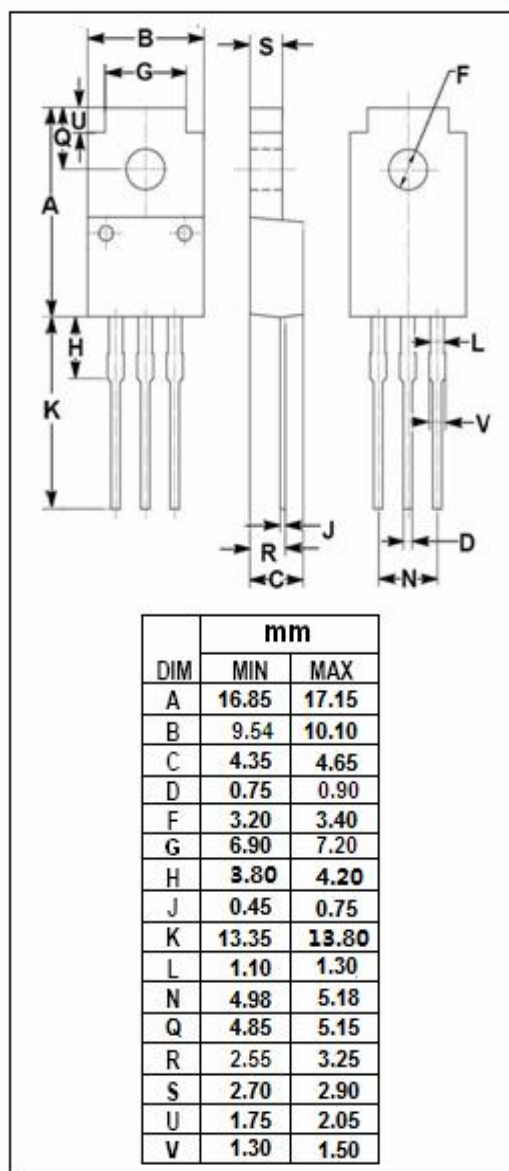
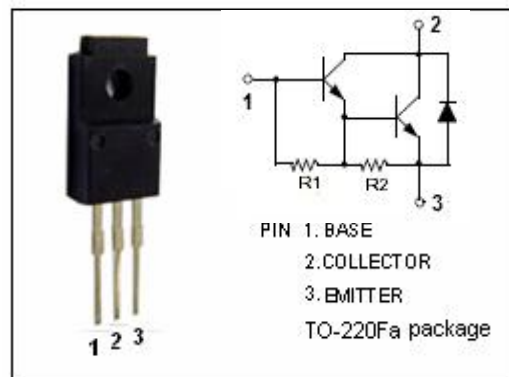
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 2A$
- High DC Current Gain
: $h_{FE} = 2000(\text{Min}) @ I_C = 2A$
- Complement to Type 2SB1098
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for audio frequency power amplifier and low speed switching industrial use.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CP}	Collector Current-Pulse	10	A
I_B	Base Current-Continuous	0.5	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	20	
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 _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A; I _B = 2mA			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A; I _B = 2mA			2.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			1.0	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			3.0	mA
h _{FE-1}	DC Current Gain	I _C = 2A; V _{CE} = 2V	2000		20000	
h _{FE-2}	DC Current Gain	I _C = 4A; V _{CE} = 2V	500			

Switching times

t _{on}	Turn-on Time	I _C = 2A, I _{B1} = I _{B2} = 2mA; R _L = 25 Ω ; V _{CC} ≈ 50V		1.0		μ s
t _{stg}	Storage Time			3.5		μ s
t _f	Fall Time			1.2		μ s

◆ h_{FE-1} Classifications

M	L	K
2000-5000	4000-10000	8000-20000

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