

isc Silicon NPN Darlington Power Transistor**2SD1590****DESCRIPTION**

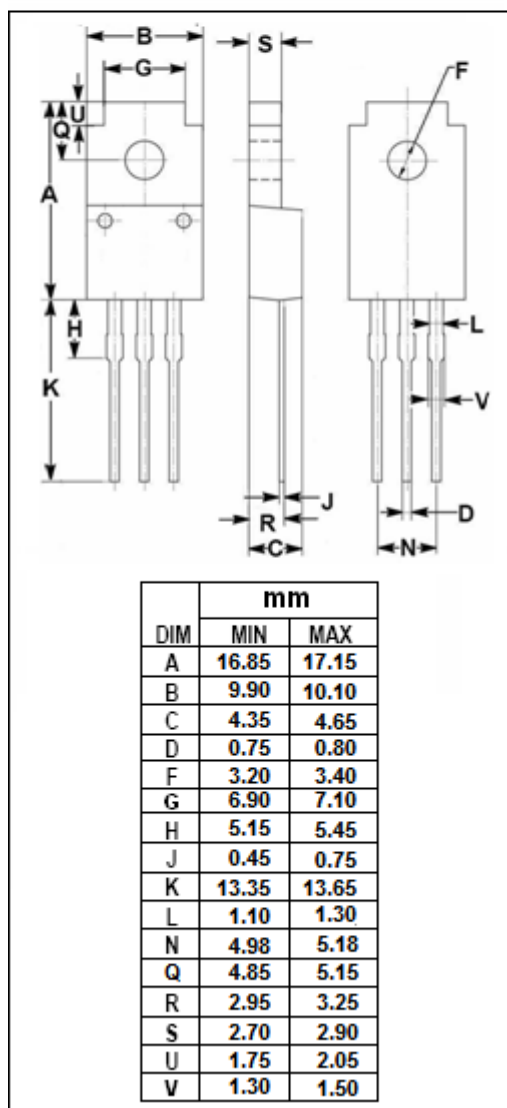
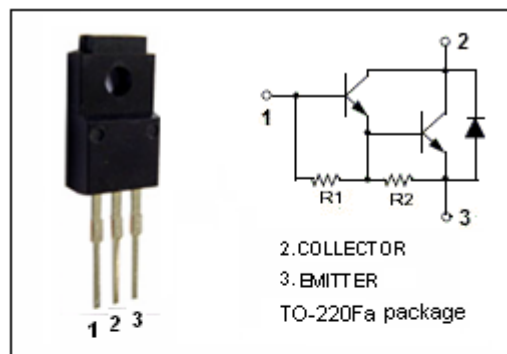
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 3A$
- High DC Current Gain
: $h_{FE} = 2000(\text{Min}) @ I_C = 3A$
- Complement to Type 2SB1099

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	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	8	A
I_{CP}	Collector Current-Pulse	12	A
I_B	Base Current-Continuous	0.8	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	25	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD1590****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	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	$V_{CB} = 100V; I_E = 0$			1.0	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5V; I_C = 0$			3.0	mA
h_{FE-1}	DC Current Gain	$I_C = 3A; V_{CE} = 2V$	2000		15000	
h_{FE-2}	DC Current Gain	$I_C = 5A; V_{CE} = 2V$	500			

Switching times

t_{on}	Turn-on Time	$I_C = 3A, I_{B1} = -I_{B2} = 3mA;$ $R_L = 16.7 \Omega; V_{CC} \approx 50V$		1.0		μs
t_{stg}	Storage Time			3.5		μs
t_f	Fall Time			1.2		μs

◆ **h_{FE-1} Classifications**

M	L	K
2000-5000	3000-7000	5000-15000