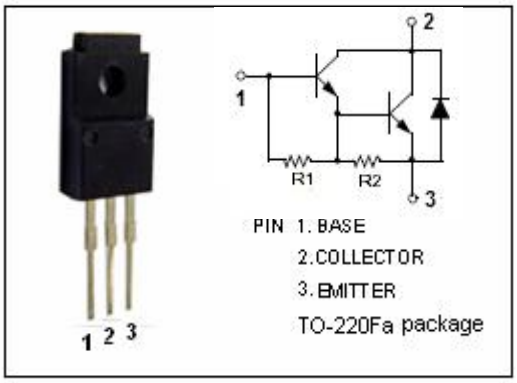
isc Silicon NPN Darlington Power Transistor 2SD1591



DESCRIPTION

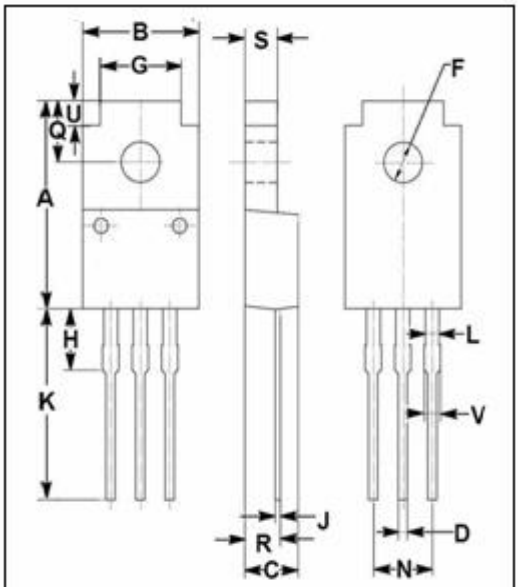
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1.5V(Max) @I_C= 10A
- High DC Current Gain
  : h_{FE}= 1000(Min) @ I_C= 10A
- Complement to Type 2SB1100
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	10	A
I_{CP}	Collector Current-Pulse	20	A
I_B	Base Current-Continuous	1.0	A
P_C	Collector Power Dissipation @ T_a=25℃	2	W
	Collector Power Dissipation @ T_C=25℃	30	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	mm MAX
A	16.85	17.15
B	9.54	10.10
C	4.35	4.65
D	0.75	0.90
F	3.20	3.40
G	6.90	7.20
H	3.80	4.20
J	0.45	0.75
K	13.35	13.80
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.55	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

isc Silicon NPN Darlington Power Transistor 2SD1591

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 25mA			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 10A; I_B= 25mA			2.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 100V; I_E= 0			10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			3.0	mA
h_{FE}	DC Current Gain	I_C= 10A; V_{CE}= 2V	1000		30000	
Switching times						
t_{on}	Turn-on Time	I_C= 10A, I_{B1}= I_{B2}= 25mA; R_L= 5Ω; V_{CC}≈ 50V		1.0		μs
t_{stg}	Storage Time			5.0		μs
t_f	Fall Time			2.0		μs

◆ **h_{FE} Classifications**

M	L	K	J
1000-3000	2000-5000	4000-10000	8000-30000