

ISC Silicon NPN Darlington Power Transistor

2SD1791

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)}=100V$ (Min.)
- High Switching Speed

APPLICATIONS

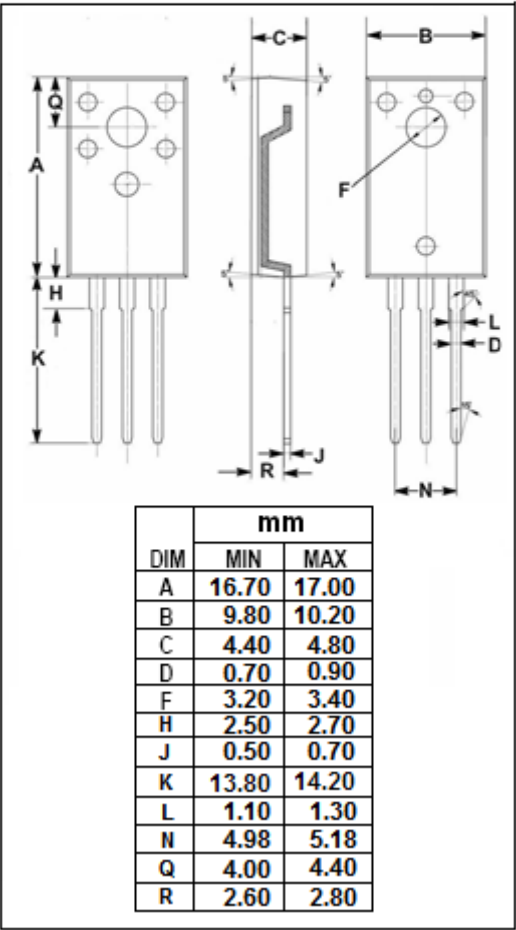
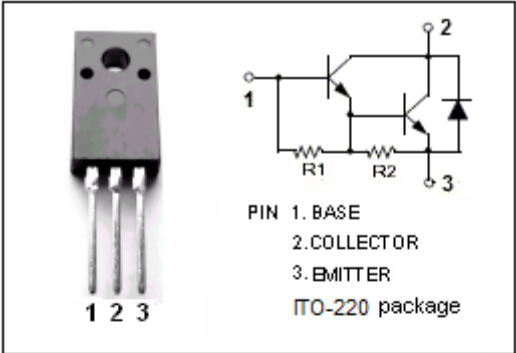
- Designed for audio frequency power amplifier and low speed high current switching industrial use.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEO}	Collector-Emitter Voltage	100	V
V_{CBO}	Collector-Base Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	0.5	A
I_{BM}	Base Current-Peak	1.0	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}C$	30	W
T_j	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-55~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.17	$^{\circ}C/W$



ISC Silicon NPN Darlington Power Transistor

2SD1791

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	$I_C=3\text{A}; I_B=5\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=5\text{mA}$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=100\text{V}; I_E=0$			0.1	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=100\text{V}; I_B=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			5	mA
h_{FE}	DC Current Gain	$I_C=3\text{A}, V_{CE}=3\text{V}$	1500		30000	
f_T	Current-Gain—Bandwidth Product	$I_C=0.7\text{A}; V_{CE}=10\text{V}$		20		MHz

Switching Times; Resistive Load

t_{on}	Turn-On Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=5\text{mA}$ $V_{BB2}=4\text{V}; R_L=10\Omega$			2	μs
t_s	Storage Time				12	μs
t_f	Fall Time				5	μs