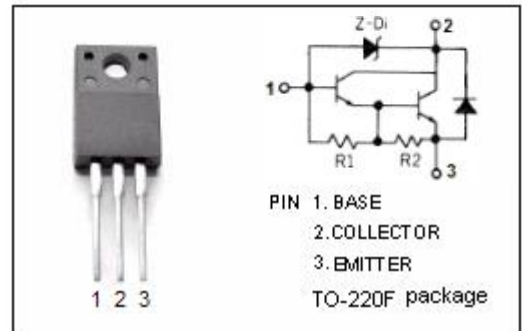


isc Silicon NPN Darlington Power Transistor
2SD1790
DESCRIPTION

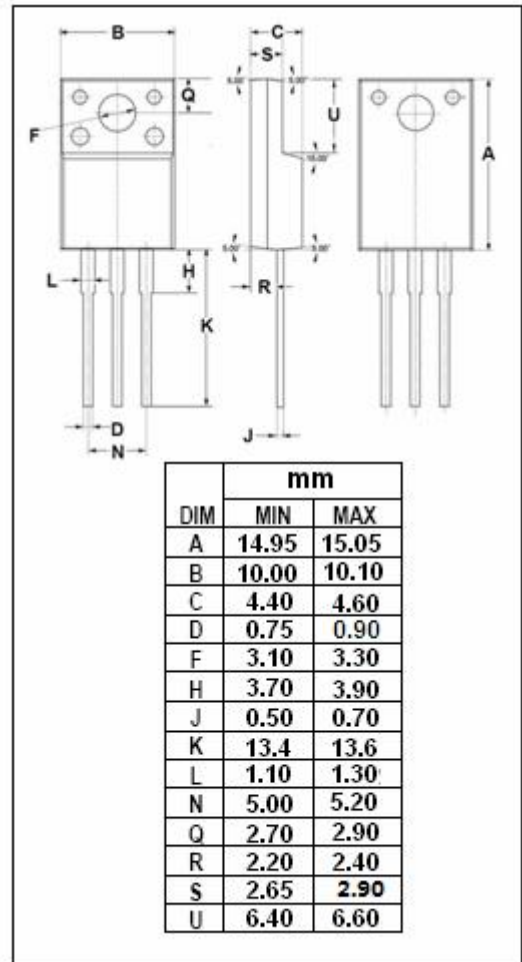
- Low Collector Saturation Voltage
- High DC Current Gain
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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


ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CEO}	Collector-Emitter Voltage	50-70	V
V _{CBO}	Collector-Base Voltage	50-70	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current-Continuous	4	A
I _{CM}	Collector Current-Peak	6	A
I _B	Base Current-Continuous	0.3	A
I _{BM}	Base Current-Peak	0.5	A
P _C	Collector Power Dissipation @T _c =25°C	25	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-55~150	°C


THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	5.0	°C/W

isc Silicon NPN Darlington Power Transistor**2SD1790****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	$I_C=1\text{A}; I_B=2\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=2\text{mA}$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=40\text{V}; I_E=0$			0.1	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=40\text{V}; I_B=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			5	mA
h_{FE}	DC Current Gain	$I_C=1\text{A}, V_{CE}=3\text{V}$	1500		30000	
f_T	Current-Gain—Bandwidth Product	$I_C=0.4\text{A}; V_{CE}=10\text{V}$		20		MHz

Switching Times; Resistive Load

t_{on}	Turn-On Time	$I_C=1\text{A}; I_{B1}=-I_{B2}=2\text{mA}$ $V_{BB2}=4\text{V}; R_L=25\ \Omega$			2	μs
t_s	Storage Time				12	μs
t_f	Fall Time				5	μs

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