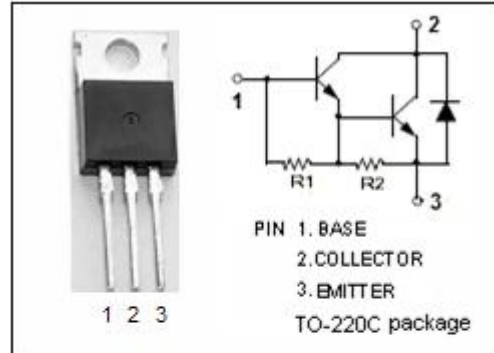


isc Silicon NPN Darlington Power Transistor
2SD1190
DESCRIPTION

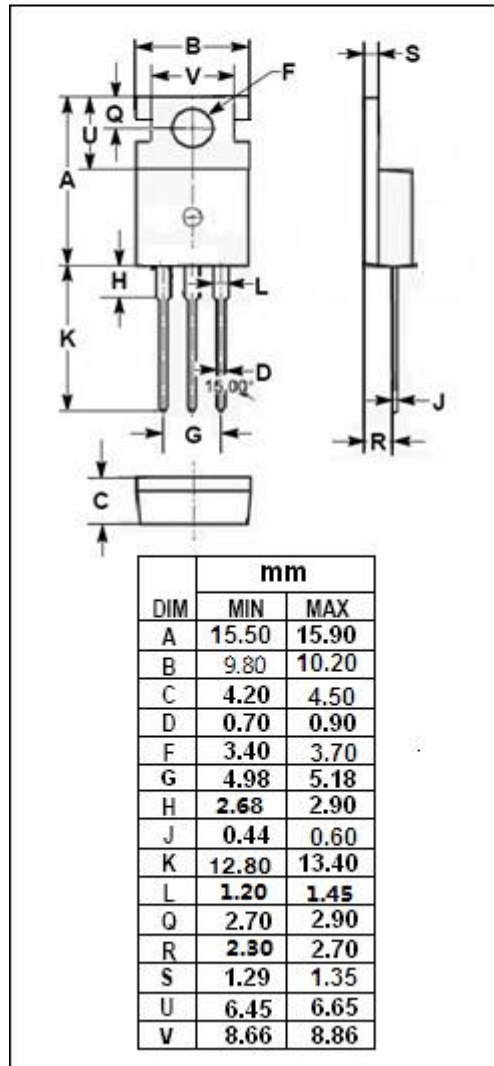
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 2000(\text{Min}) @ I_C = 2A$
- Low Saturation Voltage
- Complement to Type 2SB880
- Minimum Lot-to-Lot variations for robust device performance and reliable operation


APPLICATIONS

- Designed for motor drivers, printer hammer drivers, relay drivers, voltage regulator applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	70	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	4	A
I_{CP}	Collector Current-Peak	6	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.75	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	30	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD1190****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}; R_{BE}=\infty$	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	70			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=4\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=4\text{mA}$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=40\text{V}; I_E=0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			3.0	mA
h_{FE}	DC Current Gain	$I_C=2\text{A}; V_{CE}=2\text{V}$	2000			
f_T	Current-Gain—Bandwidth Product	$I_C=2\text{A}; V_{CE}=5\text{V}$		20		MHz

Switching times

t_{on}	Turn-on Time	$I_C=2\text{A}, I_{B1}=I_{B2}=4\text{mA}$ $P_W=50\mu\text{s}; \text{Duty Cycle}\leq 1\%$		0.6		μs
t_{stg}	Storage Time			2.7		μs
t_f	Fall Time			1.6		μs

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