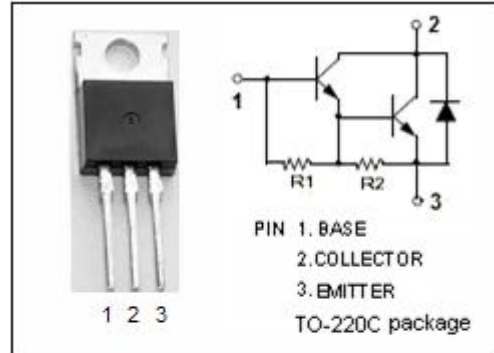


**isc Silicon NPN Darlington Power Transistor**
**2SD1194**
**DESCRIPTION**

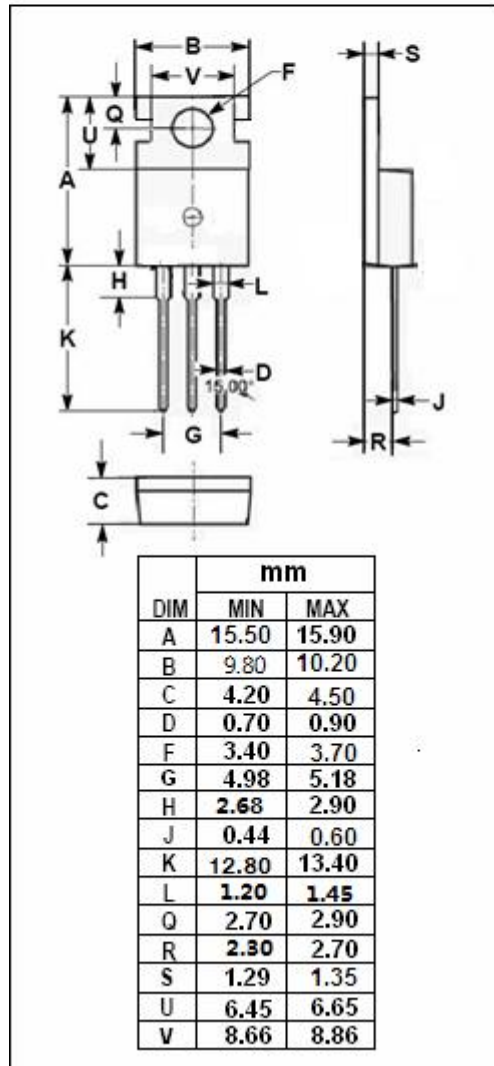
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 100V(\text{Min})$
- High DC Current Gain  
:  $h_{FE} = 1500(\text{Min}) @ I_C = 1.5A$
- Low Saturation Voltage
- Complement to Type 2SB884
- Minimum Lot-to-Lot variations for robust device performance and reliable operation


**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	110	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	3	A
$I_{CP}$	Collector Current-Peak	5	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**
**2SD1194**
**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	$I_C=30\text{mA}; R_{BE}=\infty$	100			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	110			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=3\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=3\text{mA}$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=80\text{V}; I_E=0$			100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			3.0	mA
$h_{FE}$	DC Current Gain	$I_C=1.5\text{A}; V_{CE}=3\text{V}$	1500			
$f_T$	Current-Gain—Bandwidth Product	$I_C=1.5\text{A}; V_{CE}=5\text{V}$		20		MHz

## Switching times

$t_{on}$	Turn-on Time	$I_C=1.5\text{A}, I_{B1}=I_{B2}=3\text{mA}$ $P_W=50\mu\text{s}; \text{Duty Cycle}\leq 1\%$		0.7		$\mu\text{s}$
$t_{stg}$	Storage Time			5.0		$\mu\text{s}$
$t_f$	Fall Time			1.2		$\mu\text{s}$

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