

## isc Silicon NPN Darlington Power Transistor

2SD2091

## DESCRIPTION

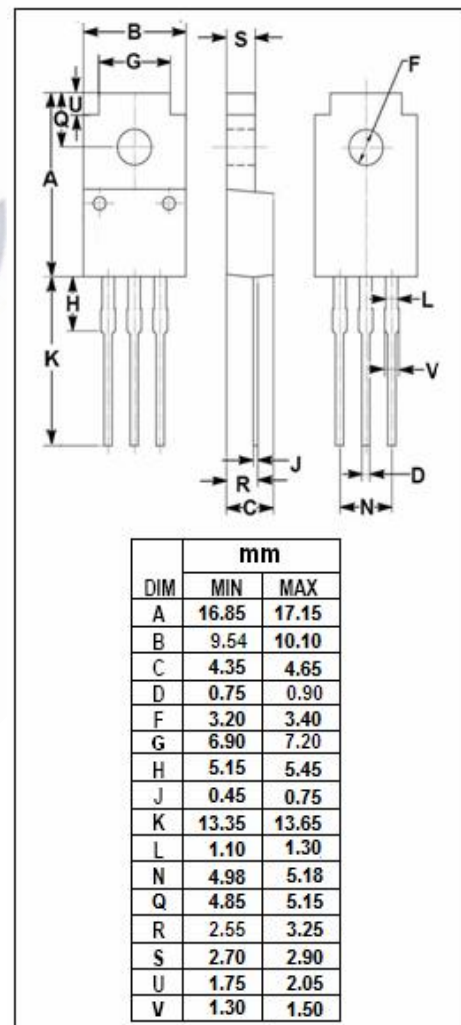
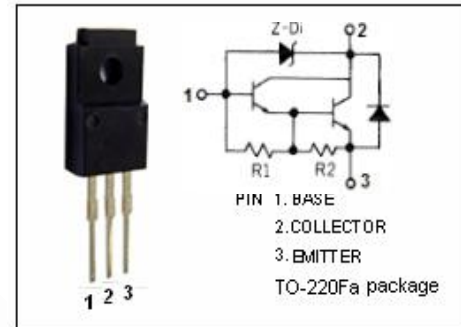
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 1\text{A}$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = 1.5\text{V}(\text{Max}) @ I_C = 1\text{A}$
- Incorporating a built-in zener diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Low-frequency power amplifier amplifications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80-110	V
$V_{CEO}$	Collector-Emitter Voltage	80-110	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	2	A
$I_{CM}$	Base Current-Peak	3	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	20	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



**isc Silicon NPN Darlington Power Transistor****2SD2091****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	$I_C=1\text{mA}; I_B=0$	80		110	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=0.1\text{mA}; I_E=0$	80		110	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=3\text{mA}; I_C=0$	5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=1\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=1\text{mA}$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=70\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			3.0	mA
$h_{FE}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=2\text{V}$	1000		10000	
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		25		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=5\text{V}$		80		MHz