

isc Silicon NPN Darlington Power Transistor

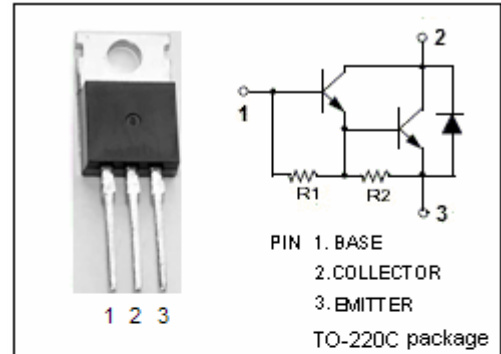
TIP131

DESCRIPTION

- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 4A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = 80V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = 2.0V(\text{Max}) @ I_C = 4A$
- Complement to Type TIP136

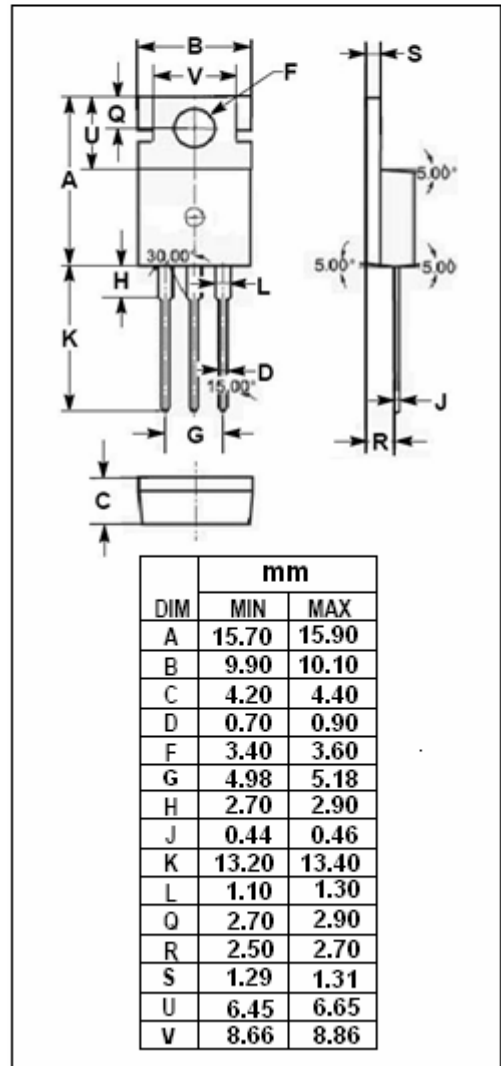
APPLICATIONS

- Designed for general-purpose amplifier and low-speed switching applications



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	8	A
$I_{CM}$	Collector Current-Peak	12	A
$I_B$	Base Current- Continuous	0.3	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	70	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.785	$^\circ\text{C}/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	63.5	$^\circ\text{C}/W$

## isc Silicon NPN Darlington Power Transistor

## TIP131

## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=30\text{mA}$ , $I_B=0$	80		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}$ ; $I_B=16\text{mA}$		2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}$ , $I_B=30\text{mA}$		3.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=4\text{A}$ ; $V_{CE}=4\text{V}$		2.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=80\text{V}$ , $I_E=0$		0.2	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=40\text{V}$ , $I_B=0$		0.5	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}$ ; $I_C=0$		5	mA
$h_{FE-1}$	DC Current Gain	$I_C=1\text{A}$ ; $V_{CE}=4\text{V}$	500		
$h_{FE-2}$	DC Current Gain	$I_C=4\text{A}$ ; $V_{CE}=4\text{V}$	1000	15000	