

**isc Silicon NPN Darlington Power Transistor**

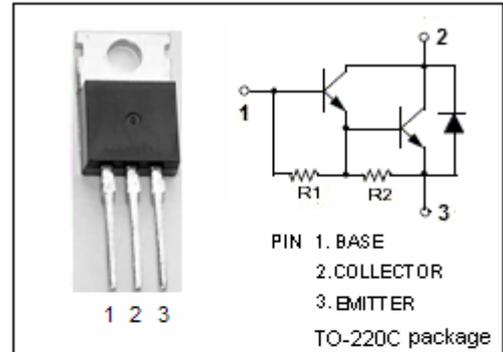
**TIP130**

**DESCRIPTION**

- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 4A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = 60V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = 2.0V(\text{Max}) @ I_C = 4A$
- Complement to Type TIP135

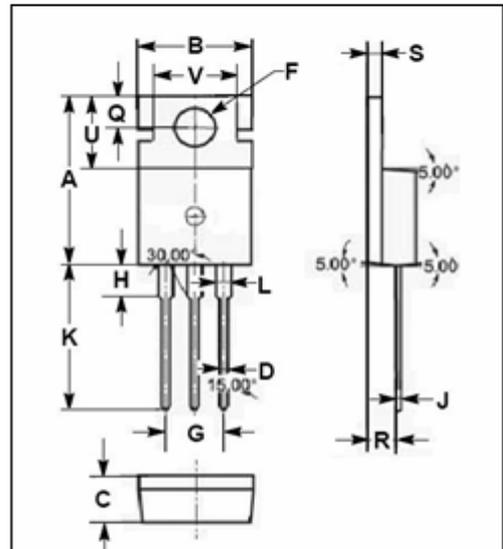
**APPLICATIONS**

- 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	60	V
$V_{CEO}$	Collector-Emitter Voltage	60	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	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

**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****TIP130****ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 30mA, I <sub>B</sub> = 0	60		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 16mA		2.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 6A, I <sub>B</sub> = 30mA		3.0	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 4A; V <sub>CE</sub> = 4V		2.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 60V, I <sub>E</sub> = 0		0.2	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 30V, I <sub>B</sub> = 0		0.5	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0		5	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 1A; V <sub>CE</sub> = 4V	500		
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 4A; V <sub>CE</sub> = 4V	1000	15000	