

isc Silicon NPN Power Transistors

TIP41

DESCRIPTION

- DC Current Gain $-h_{FE} = 30(\text{Min}) @ I_C = 0.3A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 40V(\text{Min})$
- Complement to Type TIP42
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

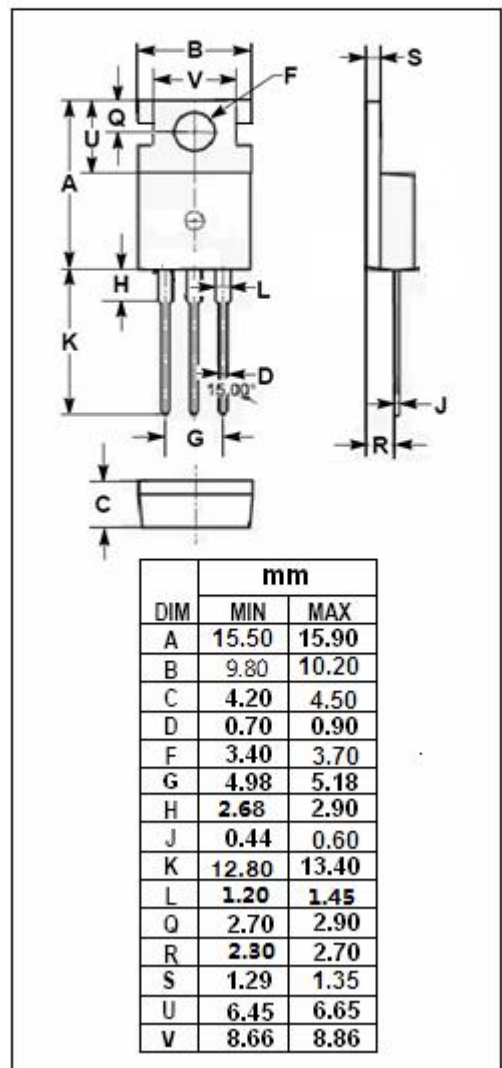
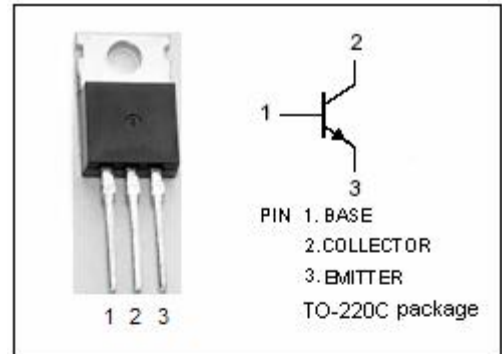
- Designed for use in general purpose amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	6	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current	2	A
P_C	Collector Power Dissipation $T_C = 25^\circ\text{C}$	65	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	1.67	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	57	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=30\text{mA}; I_B=0$	40		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.6\text{A}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=6\text{A}; V_{CE}=4\text{V}$		2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=40\text{V}; I_E=0$		0.4	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=40\text{V}; I_B=0$		0.7	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$		1.0	mA
h_{FE-1}	DC Current Gain	$I_C=0.3\text{A}; V_{CE}=4\text{V}$	30		
h_{FE-2}	DC Current Gain	$I_C=3\text{A}; V_{CE}=4\text{V}$	15	75	
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$	3		MHz

Switching Time

t_{on}	Turn-On Time	$I_C=6\text{A}; I_{B1}=-I_{B2}=0.6\text{A};$ $V_{BE(off)}=4\text{V}, R_L=5\Omega$		0.6	μs
t_{off}	Turn-Off Time			1.0	μs

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