

## isc Silicon NPN Power Transistors

## TIP41D

## DESCRIPTION

- DC Current Gain  $-h_{FE} = 30(\text{Min})@ I_C = 0.3\text{A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = 120\text{V}(\text{Min})$
- Complement to Type TIP42D
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

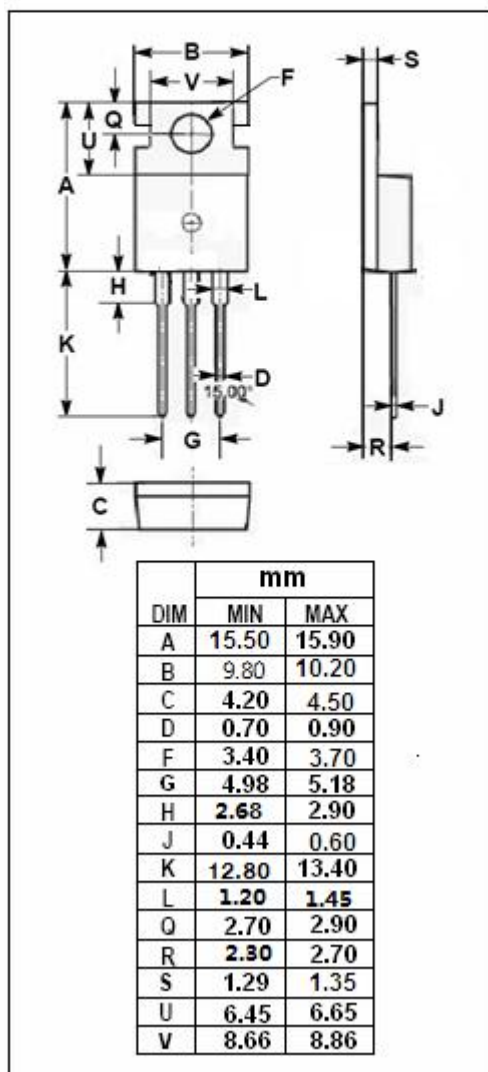
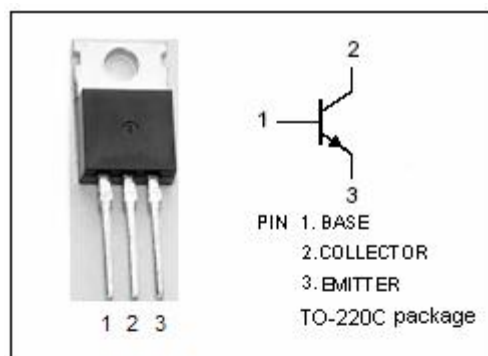
- Designed for use in general purpose amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	160	V
$V_{CEO}$	Collector-Emitter Voltage	120	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	3	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	1.92	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 30\text{mA}$ ; $I_B = 0$	120		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 6\text{A}$ ; $I_B = 1.5\text{A}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 6\text{A}$ ; $V_{CE} = 4\text{V}$		2.0	V
$I_{CES}$	Collector Cutoff Current	$V_{CE} = 160\text{V}$ ; $V_{BE} = 0$		0.4	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = 90\text{V}$ ; $I_B = 0$		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		
$f_T$	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	$\mu\text{s}$
$t_{off}$	Turn-Off Time			1.0	$\mu\text{s}$

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