

isc Silicon PNP Power Transistors

TIP42D

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 TIP41D

APPLICATIONS

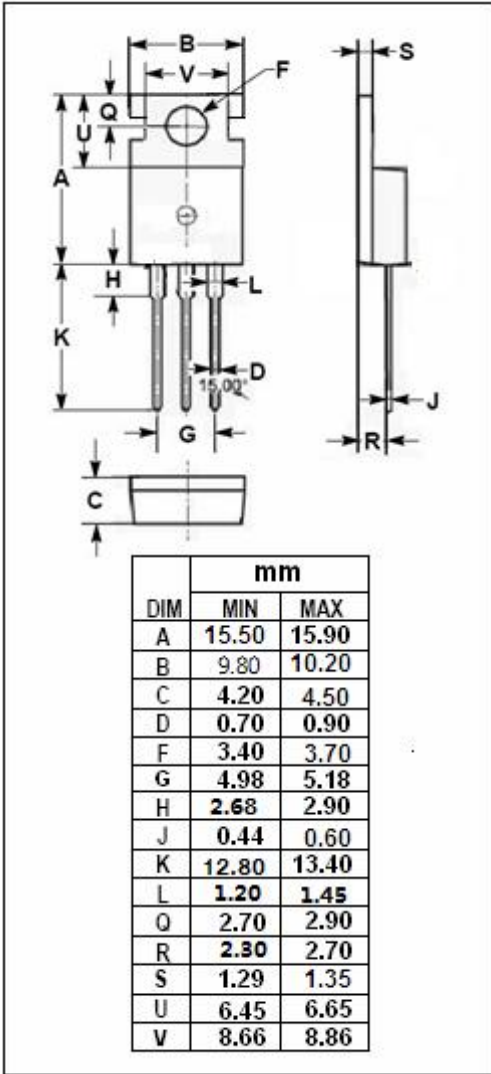
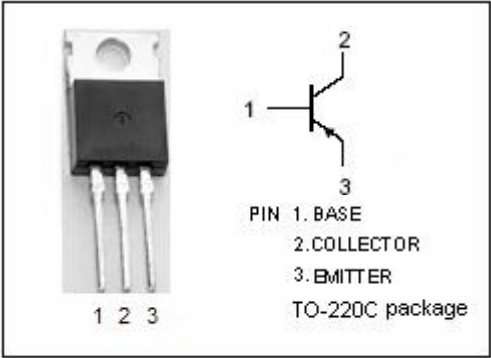
- Designed for use in general purpose amplifier and switching applications

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	$^{\circ}\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^{\circ}\text{C}/\text{W}$



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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	$I_C = -30\text{mA}$; $I_B = 0$	-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_{CBO}	Collector Cutoff Current	$V_{CB} = -160\text{V}$; $I_E = 0$		-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	μs
t_{off}	Turn-Off Time			1.0	μs