

DESCRIPTION

- Excellent Safe Operating Area
- High DC Current Gain- $h_{FE} = 15(\text{Min}) @ I_C = 8\text{A}$
- Low Saturation Voltage-
: $V_{CE(\text{sat})} = 1.0\text{V}(\text{Max}) @ I_C = 10\text{A}$
- Complement to Type 2N6031

APPLICATIONS

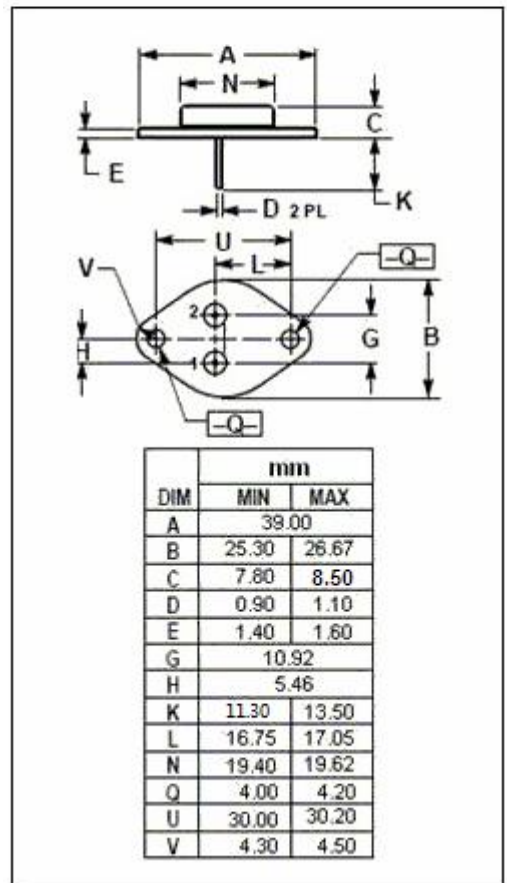
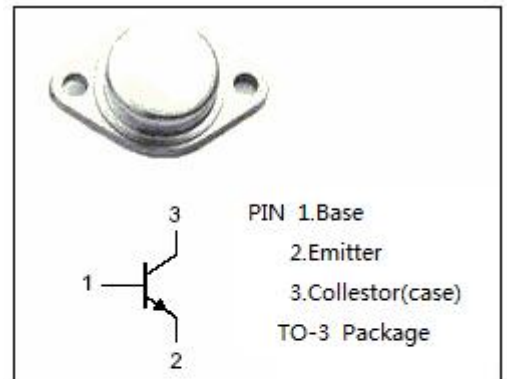
- Designed for use in high power audio amplifier applications and high voltage switching regulator circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	140	V
V_{CEO}	Collector-Emitter Voltage	140	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	16	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	200	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.875	$^\circ\text{C/W}$



SPTECH Silicon NPN Power Transistor

2N5631

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}$; $I_B=0$	140		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}$; $I_B=1\text{A}$		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=16\text{A}$; $I_B=4\text{A}$		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}$; $I_B=1\text{A}$		1.8	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=8\text{A}$; $V_{CE}=2\text{V}$		1.5	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=70\text{V}$; $I_B=0$		2.0	mA
I_{CBO}	Collector Cutoff Current	$V_{CB}=140\text{V}$; $I_E=0$		2.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=140\text{V}$; $V_{BE(off)}=1.5\text{V}$ $V_{CE}=140\text{V}$; $V_{BE(off)}=1.5\text{V}$, $T_C=150^{\circ}\text{C}$		2.0 7.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7.0\text{V}$; $I_C=0$		5.0	mA
h_{FE-1}	DC Current Gain	$I_C=8\text{A}$; $V_{CE}=2\text{V}$	15	60	
h_{FE-2}	DC Current Gain	$I_C=16\text{A}$; $V_{CE}=2\text{V}$	4		
f_T	Current Gain-Bandwidth Product	$I_C=1\text{A}$; $V_{CE}=20\text{V}$; $f=0.5\text{MHz}$	1.0		MHz
C_{OB}	Output Capacitance	$I_E=0$; $V_{CB}=10\text{V}$; $f=0.1\text{MHz}$		500	pF