

isc Silicon NPN Power Transistor

2N3771

DESCRIPTION

- Excellent Safe Operating Area
- High DC Current Gain- $h_{FE}=15(\text{Min})@I_C = 15\text{A}$
- Low Saturation Voltage-
: $V_{CE(\text{sat})}= 2.0\text{V}(\text{Max})@ I_C = 15\text{A}$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

APPLICATIONS

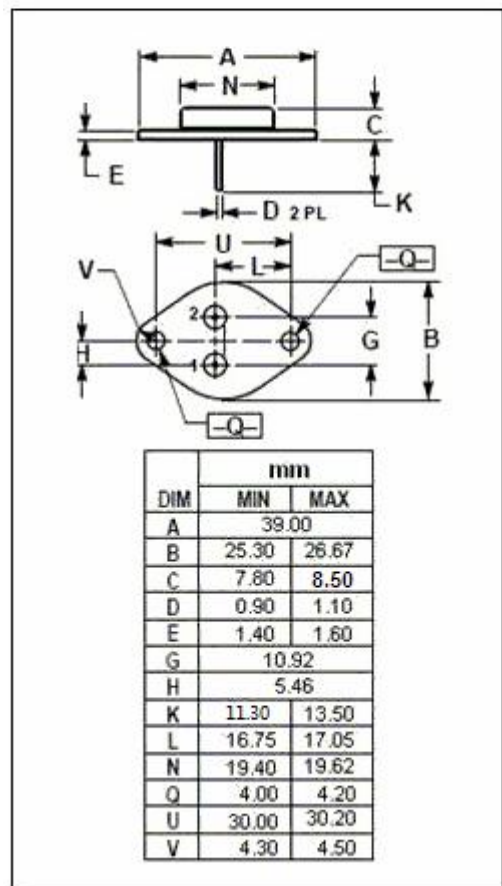
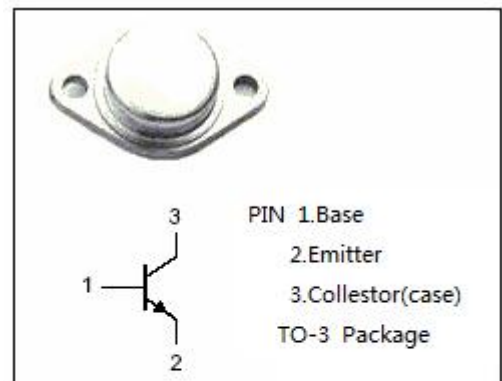
- Designed for linear amplifiers, series pass regulators, and inductive switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	50	V
V_{CEX}	Collector-Emitter Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	30	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current-Continuous	7.5	A
I_{BM}	Base Current-Peak	15	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	150	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.17	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**2N3771****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA ; I _B = 0	40		V
V _{CES(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 200mA ; V _{BE(off)} = 1.5V; R _{BE} =100 Ω	50		V
V _{CER(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 200mA ; R _{BE} = 100 Ω	45		V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 15A; I _B = 1.5A		2.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 30A; I _B = 6A		4.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 15A ; V _{CE} = 4V		2.7	V
I _{CEO}	Collector Cutoff Current	V _{CE} = 30V; I _B = 0		10	mA
I _{CEV}	Collector Cutoff Current	V _{CE} = 50V; V _{BE(off)} = 1.5V V _{CE} = 30V; V _{BE(off)} = 1.5V, T _C =150°C		2.0 10	mA
I _{CBO}	Collector Cutoff Current	V _{CB} = 50V; I _E = 0		2.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C =0		5.0	mA
h _{FE-1}	DC Current Gain	I _C = 15A ; V _{CE} = 4V	15	60	
h _{FE-2}	DC Current Gain	I _C = 30A ; V _{CE} = 4V	5		
f _T	Current-Gain—Bandwidth Product	I _C = 1A ; V _{CE} = 4V ; f _{test} = 50kHz	0.2		MHz
I _{s/b}	Second Breakdown Collector Current with Base Forward Biased	V _{CE} = 25V, t= 1.0s, Nonrepetitive	6		A

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