

SPTECH Silicon NPN Power Transistor

MJ15015

DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain-
: $h_{FE} = 20-70 @ I_C = 4A, V_{CE} = 4V$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.1 V(\text{Max}) @ I_C = 4A$
- Complement to the PNP MJ15016

APPLICATIONS

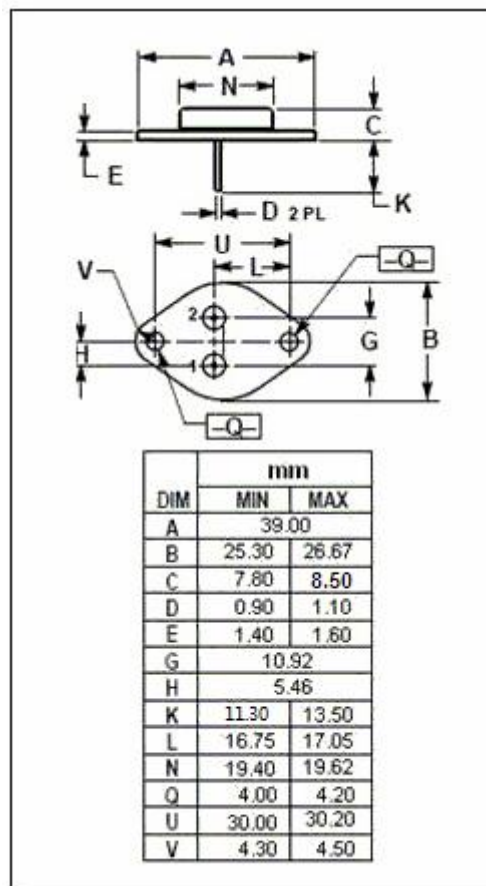
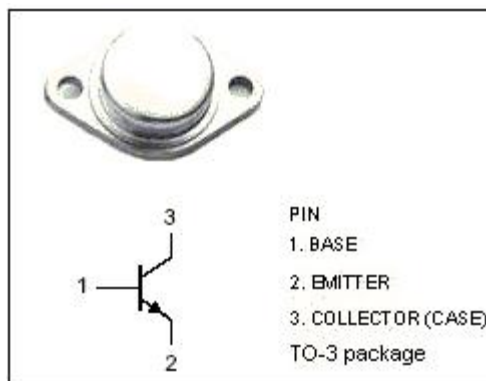
- Designed for high power audio, stepping motor and other linear applications, and can also be used in power switching circuits such as relay or solenoid drivers, DC-DC converters, inverters and etc.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	200	V
V_{CEV}	Collector-Emitter Voltage Base Reversed Biased	200	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	7	A
P_D	Total Power Dissipation@ $T_c = 25^\circ\text{C}$	180	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	0.98	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA ; I _B = 0	120		V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 4A; I _B = 0.4A		1.1	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 3.3A		3.0	V
V _{CE(sat)-3}	Collector-Emitter Saturation Voltage	I _C = 15A; I _B = 7.0A		5.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 4A ; V _{CE} = 4V		1.8	V
I _{CEO}	Collector Cutoff Current	V _{CE} = 60V; V _{BE(off)} = 0		0.1	mA
I _{CBO}	Collector Cutoff Current	V _{CB} = 200; I _E = 0 V _{CB} = 200; I _E = 0V; T _C =150°C		1 5	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0		0.2	mA
h _{FE-1}	DC Current Gain	I _C = 4A ; V _{CE} = 2V	10	70	
h _{FE-2}	DC Current Gain	I _C = 4A ; V _{CE} = 4V	20	70	
h _{FE-3}	DC Current Gain	I _C = 10A ; V _{CE} = 4V	5		
I _{s/b}	Second Breakdown Collector Current with Base Forward Biased	V _{CE} = 60V, t= 0.5 s, Nonrepetitive	3		A
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 10V; f _{test} = 1.0MHz	60	600	pF
f _T	Current-Gain—Bandwidth Product	I _C = 1A ; V _{CE} = 4V; f _{test} = 1.0MHz	0.8		MHz