

isc Silicon NPN Power Transistor

2SC3163

DESCRIPTION

- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.0V(\text{Max.}) @ I_C = 3A$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

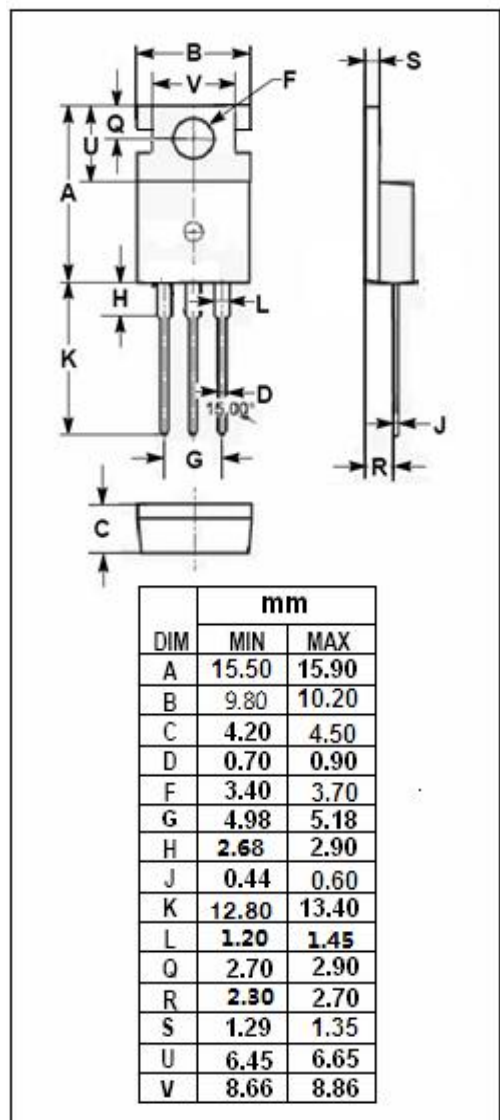
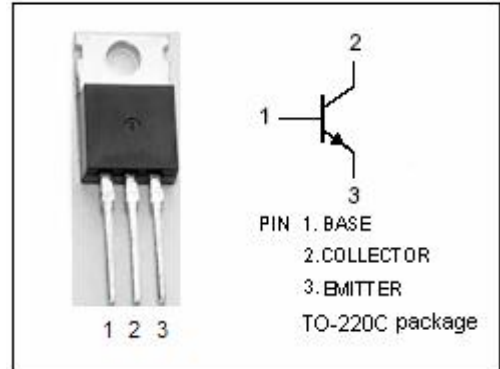
- Designed for switching regulator, DC-DC converter and high frequency power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 100 \Omega$	450	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	6	A
I_{CM}	Collector Current-Peak	12	A
I_B	Base Current-Continuous	2	A
I_{BM}	Base Current-Peak	4	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**2SC3163****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C =20mA; I _B = 0	400			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.6A			1.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 0.6A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 500V; I _E = 0			100	μ A
I _{CEO}	Collector Cutoff Current	V _{CE} = 400V; I _B = 0			100	μ A
I _{CER}	Collector Cutoff Current	V _{CE} = 400V ; R _{BE} = 100 Ω			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			10	μ A
h _{FE}	DC Current Gain	I _C = 3A; V _{CE} = 2V	10			
f _T	Current-Gain—Bandwidth Product	I _C = 0.6A; V _{CE} = 10V	10			MHz

Switching times

t _{on}	Turn-On Time	I _C = 3A; I _{B1} = 0.6A; I _{B2} = 1.2A; R _L = 50 Ω ; V _{BB2} = 4V			0.3	μ s
t _{stg}	Storage Time				1.0	μ s
t _f	Fall Time				0.1	μ s

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