

isc Silicon NPN Power Transistor
2SC3680
DESCRIPTION

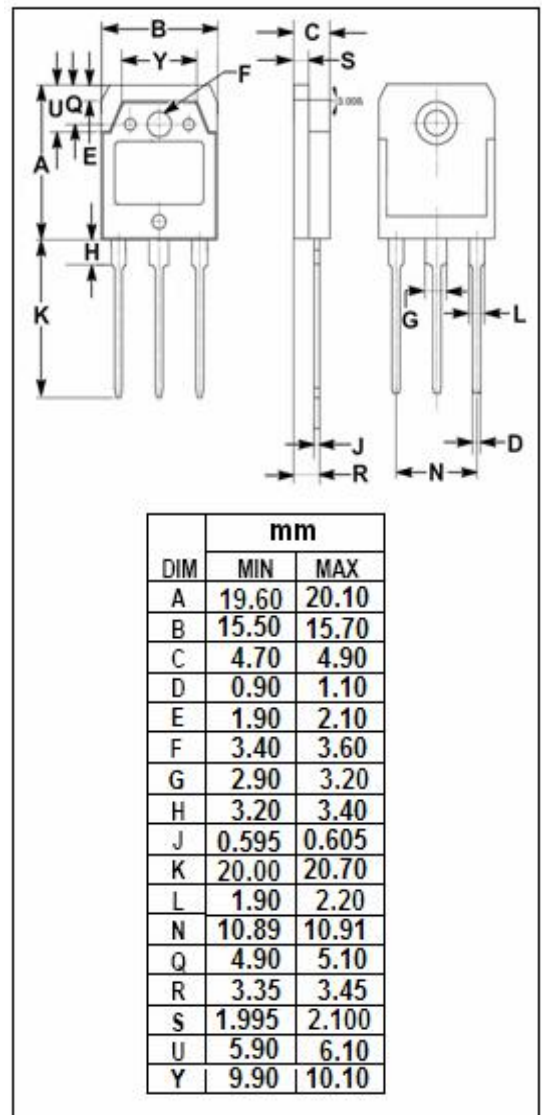
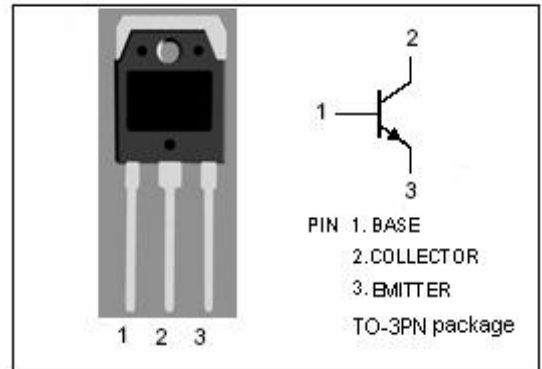
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 800V(\text{Min})$
- High Switching Speed
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for switching regulator and general purpose applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	900	V
V_{CEO}	Collector-Emitter Voltage	800	V
V_{EBO}	Emitter-Base voltage	7	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	14	A
I_B	Base Current-Continuous	3.5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	120	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 10mA ; I _B = 0	800			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.6A			0.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 0.6A			1.2	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 800V; I _E = 0			0.1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			0.1	mA
h _{FE}	DC Current Gain	I _C = 3A; V _{CE} = 4V	10		30	
f _T	Current-Gain—Bandwidth Product	I _E = -2A; V _{CE} = 12V		6		MHz
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 1.0MHz		105		pF

Switching times

t _{on}	Turn-on Time	I _C = 3A, I _{B1} = 0.45A; I _{B2} = -1.5A R _L = 83 Ω ; V _{CC} = 250V			1.0	μs
t _{stg}	Storage Time				5.0	μs
t _f	Fall Time				1.0	μs

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