

isc Silicon NPN Power Transistor

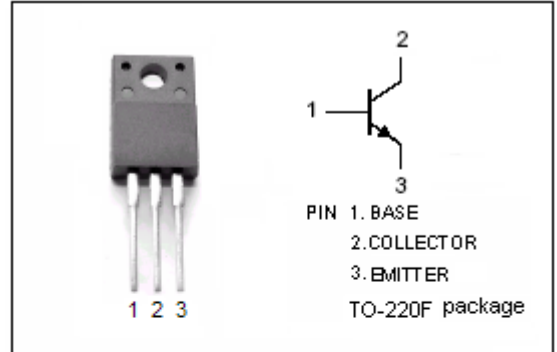
2SC4162

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation

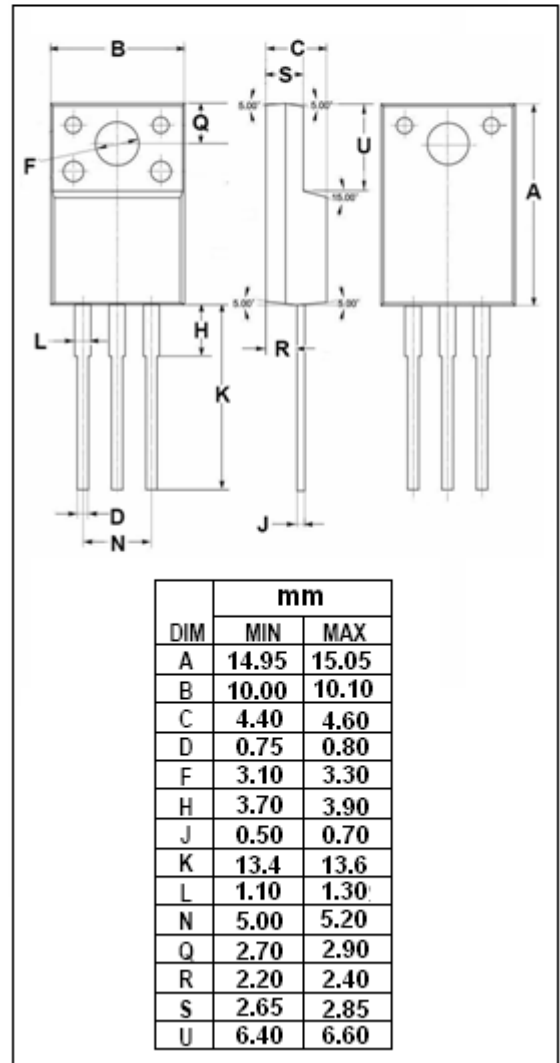
APPLICATIONS

- 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	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	20	A
P_C	Collector Power Dissipation @ $T_c=25^{\circ}\text{C}$	35	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~150	$^{\circ}\text{C}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA; I _E = 0	500			V
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 5mA; R _{BE} = ∞	400			V
V _{CEX(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 4.5A; I _{B1} = 0.45A, I _{B2} = -1.8A, L= 500 μ H, clamped	400			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 1mA; I _C = 0	7			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 6A; I _B = 1.6A			0.8	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 6A; I _B = 1.6A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 400V; I _E = 0			10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			10	μ A
h _{FE-1}	DC Current Gain	I _C = 1.6A; V _{CE} = 5V	15		50	
h _{FE-2}	DC Current Gain	I _C = 8A; V _{CE} = 5V	10			
h _{FE-3}	DC Current Gain	I _C = 10mA; V _{CE} = 5V	10			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f= 1MHz		120		pF
f _T	Current-Gain—Bandwidth Product	I _C = 1.6A; V _{CE} = 10V		20		MHz

Switching Times

t _{on}	Turn-On Time	I _C = 7A; I _{B1} = 1.4A; I _{B2} = -2.8A; V _{CC} = 200V; R _L = 28.6 Ω			0.5	μ s
t _{stg}	Storage Time				2.5	μ s
t _f	Fall Time				0.3	μ s

◆ h_{FE-1} Classifications

L	M	N
15-30	20-40	30-50