

isc Silicon NPN Power Transistor

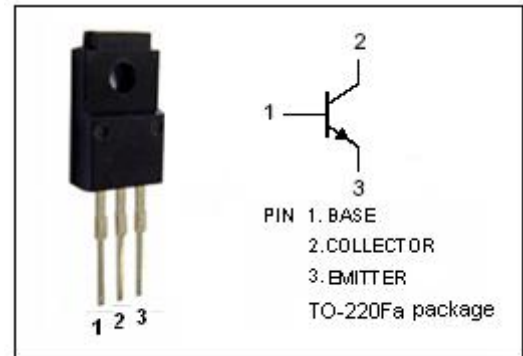
2SC3821

DESCRIPTION

- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

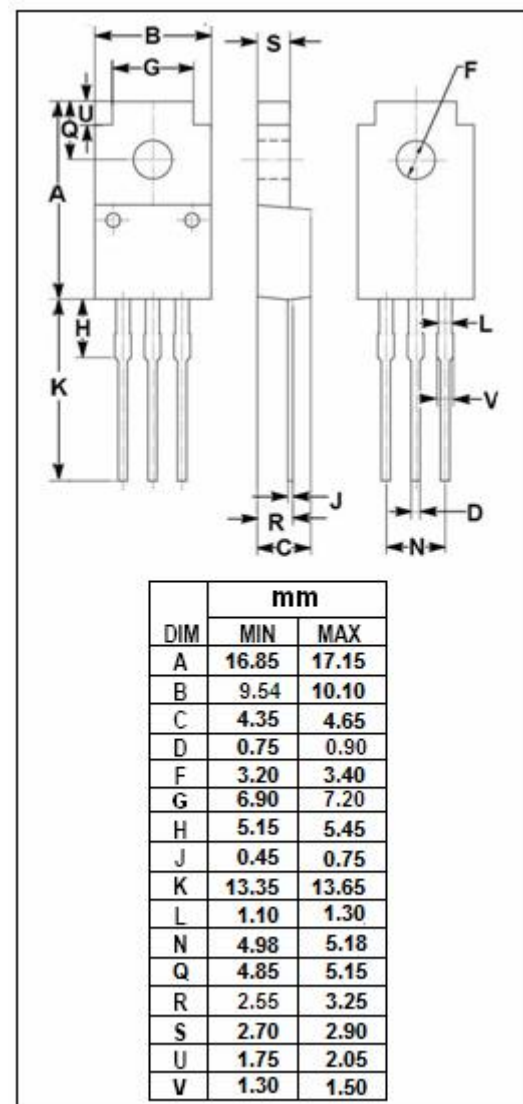
- Switching regulators
- DC-DC converter
- Solid state relay
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	450	V
V_{CEO}	Collector-Emitter Voltage	400	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base voltage	7	V
I_C	Collector Current-Continuous	5	A
I_B	Base Current-Continuous	1.5	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	40	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	3.0	$^\circ\text{C/W}$



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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	400			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA; I _E = 0	450			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 0.1mA; I _C = 0	7			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A; I _B = 0.4A			1.2	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A; I _B = 0.4A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 450V; I _E =0			1.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C =0			0.1	mA
h _{FE}	DC Current Gain	I _C = 2A; V _{CE} = 5V	10			

Switching times

t _{on}	Turn-on Time	I _C = 4A, I _{B1} = -I _{B2} = 0.8A; R _L = 20 Ω; P _W =20 μs Duty Cycle ≤ 2%			1.0	μs
t _{stg}	Storage Time				2.5	μs
t _f	Fall Time				1.0	μs

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