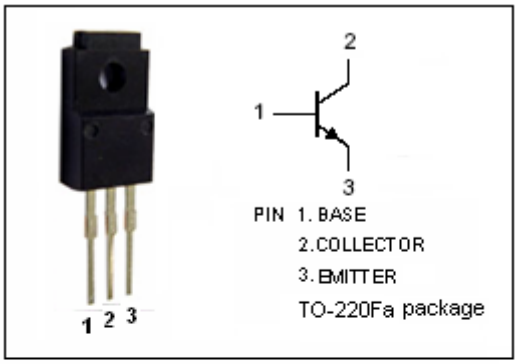
isc Silicon NPN Power Transistor 2SC3821

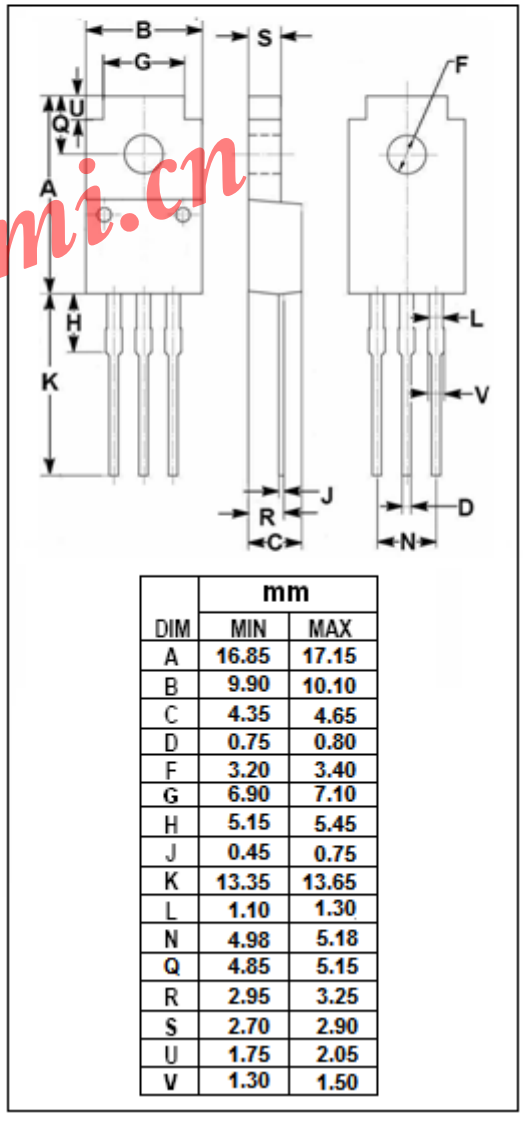
DESCRIPTION

- High Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 400V(Min)
- High Switching Speed
- High Reliability



APPLICATIONS

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



DIM	mm MIN	MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
F	3.20	3.40
G	6.90	7.10
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.95	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	40	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	3.0	℃/W

isc Silicon NPN Power Transistor 2SC3821

ELECTRICAL CHARACTERISTICS

T_C=25℃ 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
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 1A; 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= 20Ω ;P_W=20μs Duty Cycle≤2%			1.0	μs
t_{stg}	Storage Time				2.5	μs
t_f	Fall Time				1.0	μs