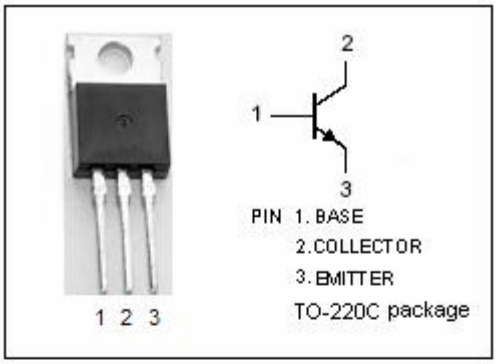
isc Silicon NPN Power Transistor — MJE16002

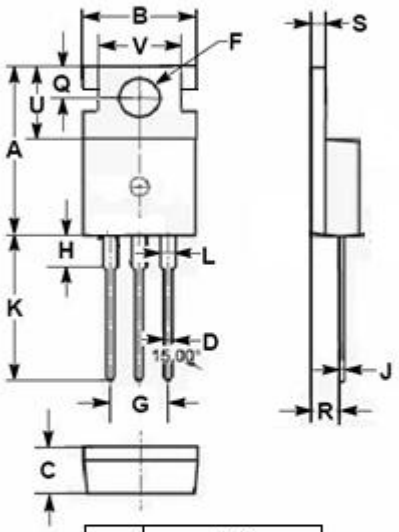
DESCRIPTION

- Collector–Emitter Sustaining Voltage
  : $V_{CEO(SUS)}$ = 450V(Min.)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- Designed for use in high-voltage, high-speed switching of inductive circuits where fall time and RBSOA are critical. they are particularly well-suited for line-operated switch-mode applications such as:
- Switching Regulators
- High resolution deflection circuits
- Inverters
- Motor drive



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

Absolute maximum ratings(Ta=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	850	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-peak	10	A
I_B	Base Current	4	A
I_{BM}	Base Current-Peak	8	A
P_C	Collector Power Dissipation T_C=25℃	80	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.56	℃/W

isc Silicon NPN Power Transistor MJE16002

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 30mA; I_B= 0	450			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 1.5A ;I_B= 0.2A			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 3A ;I_B= 0.4A T_C= 100℃			2.5 2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 3A ;I_B= 0.4A T_C= 100℃			1.5 1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 850V; I_E= 0 T_C= 100℃			0.25 1.5	mA
I_{CEO}	Collector Cutoff Current	V_{CE}= 450V;T_C= 100℃			2.5	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 6V; I_C= 0			1.0	mA
h_{FE}	DC Current Gain	I_C= 5A; V_{CE}= 5V	5			
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test} = 1.0kHz		200		pF
Switching Times; Resistive Load						
t_d	Storage Time	I_C= 3A; V_{CC}= 250V; I_{B1}= 0.4A;I_{B2}= 0.8A; R_{B2}= 8Ω ; PW= 30μs; Duty Cycle≤2%			0.1	μs
t_r	Fall Time				0.3	μs
t_s	Storage Time				3.0	μs
t_f	Fall Time				0.3	μs

isc Silicon NPN Power Transistor MJE16002

NOTICE：

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.