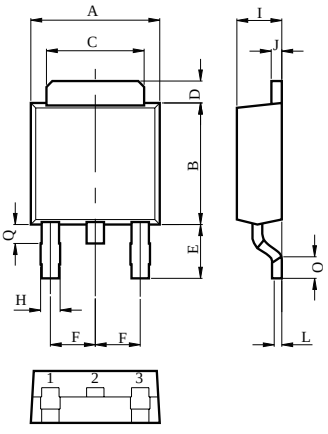
MJE13003D

SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE AND HIGH SPEED
SWITCHING APPLICATION.

FEATURES

· Excellent Switching Times
: t_{on}=1.1μS(Max.), t_f=0.5μS(Max.), at I_C=1.0A
· High Collector Voltage : V_{CBO}=700V.



DIM	MILLIMETERS
A	6 50 ± 0 2
B	5 60 ± 0 2
C	5 20 ± 0 2
D	1 50 ± 0 2
E	2 70 ± 0 2
F	2 30 ± 0 1
H	1 00 MAX
I	2 30 ± 0 2
J	0 5 ± 0 1
L	0 50 ± 0 10
O	1 6 ± 0 2
Q	0 95 MAX

1 BASE
2 COLLECTOR
3 EMITTER

D-PAK (TO-252)

MAXIMUM RATING (Ta=25˚C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	700	V
Collector-Emitter Voltage		V_{CEO}	400	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	1.5	A
	Pulse	I_{CP}	3	
Collector Power Dissipation		I_B	0.75	A
Collector Power Dissipation		P_C	1.25	W
Junction Temperature		T_j	150	˚C
Storage Temperature Range		T_{stg}	-55~150	˚C

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

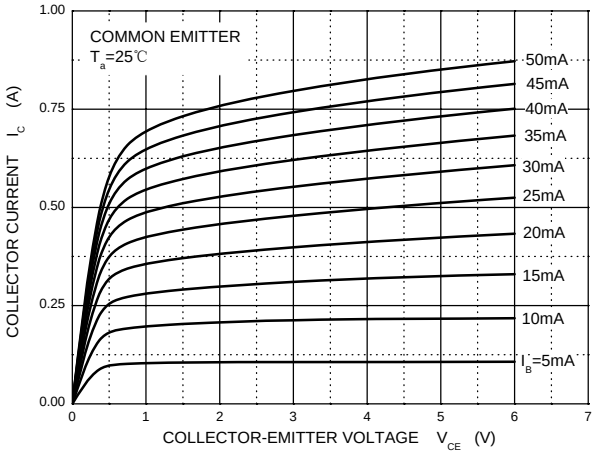
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	Ic= 1mA, I_E=0	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	Ic= 10 mA, I_B=0	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 1mA, I_C=0	9			V
Collector cut-off current	I_{CBO}	V_{CB}= 700V, I_E=0			1	mA
Collector cut-off current	I_{CEO}	V_{CE}= 400V, I_B=0			0.5	mA
Emitter cut-off current	I_{EBO}	V_{EB}= 9 V, I_C=0			1	mA
DC current gain	$h_{FE(1)}$	V_{CE}= 5 V, I_C= 0.2 A	8		40	
	$h_{FE(2)}$	V_{CE}= 5 V, I_C= 1.5A	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=1A, I_B= 250 mA			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=1A, I_B= 250mA			1.2	V
Base-emitter voltage	V_{BE}	I_E= 2A			3	V
Transition frequency	f_T	V_{CE}=10V, Ic=100mA f =1MHz	5			MHz
Fall time	t_f	I_C=1A, I_{B1}=- I_{B2}=0.2A V_{CC}=100V			0.5	μs
Storage time	t_s	Ic=250mA	2		4	μs

CLASSIFICATION OF $h_{FE(1)}$

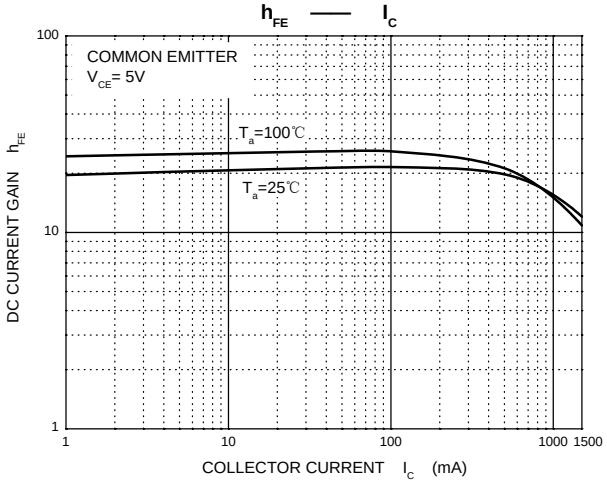
Rank							
Range	8- 10	10- 15	15- 20	20- 25	25- 30	30- 35	35- 40

Typical Characteristics

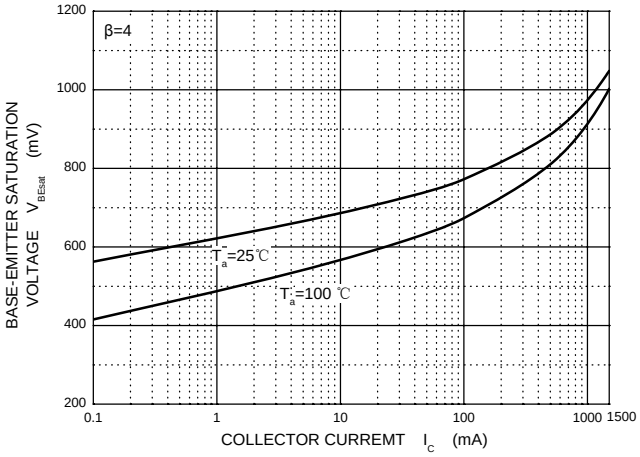
Static Characteristic



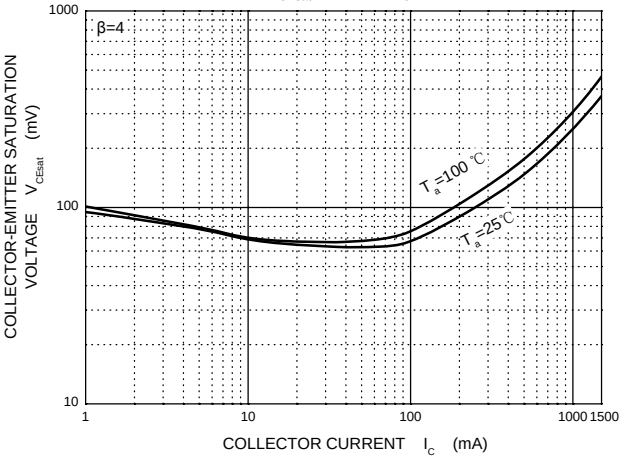
h_{FE} —— I_C



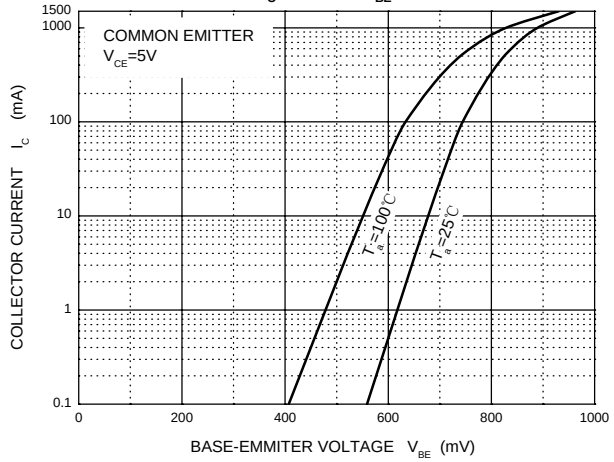
V_{BEsat} —— I_C



V_{CEsat} —— I_C



I_C —— V_{BE}



P_C —— T_a