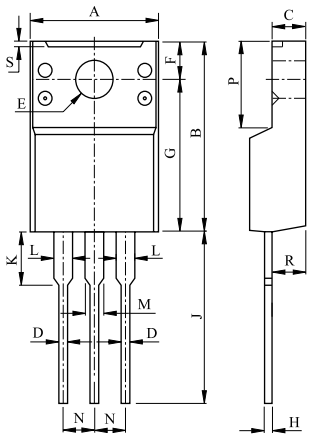
MJE13009F

TRIPLE DIFFUSED NPN TRANSISTOR

SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE SWITCHING APPLICATION.
HIGH SPEED DC-DC CONVERTER APPLICATION.

FEATURES

· Excellent Switching Times
: t_{on}=1.1㎲(Max.), t_f=0.7㎲(Max.), at I_C=8A
· High Collector Voltage : V_{CBO}=700V.



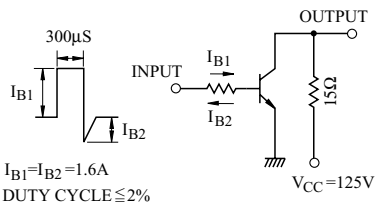
DIM	MILLIMETERS
A	10.0±0.3
B	15.0±0.3
C	2.70±0.3
D	0.76+0.09/-0.05
E	Φ3.2±0.2
F	3.0±0.3
G	12.0±0.3
H	0.5+0.1/-0.05
J	13.6±0.5
K	3.7±0.2
L	1.2+0.25/-0.1
M	1.5+0.25/-0.1
N	2.54±0.1
P	6.8±0.1
Q	4.5±0.2
R	2.6±0.2
S	0.5 Typ

TO-220IS

MAXIMUM RATING (Ta=25℃)

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	12	A
	Pulse	I_{CP}	24	
Base Current		I_B	6	A
Collector Power Dissipation (Tc=25℃)		P_C	50	W
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	I_{EBO}	V_{EB}=9V, I_C=0	-	-	1	mA
DC Current Gain	h_{FE}(1) (Note)	V_{CE}=5V, I_C=5A	14	-	28	
	h_{FE}(2)	V_{CE}=5V, I_C=8A	6	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=5A, I_B=1A	-	-	1	V
		I_C=8A, I_B=1.6A	-	-	1.5	
		I_C=12A, I_B=3A	-	-	3	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=5A, I_B=1A	-	-	1.5	V
		I_C=8A, I_B=1.6A	-	-	1.6	
Collector Output Capacitance	C_{ob}	V_{CB}=10V, f=0.1MHz, I_E=0	-	180	-	pF
Transition Frequency	f_T	V_{CE}=10V, I_C=0.5A	4	-	-	MHz
Turn-On Time	t_{on}		-	-	1.1	㎲
Storage Time	t_{stg}		-	-	3	㎲
Fall Time	t_f		-	-	0.7	㎲

Note : h_{FE} Classification O:14～28

Fig.1 DC current Gain

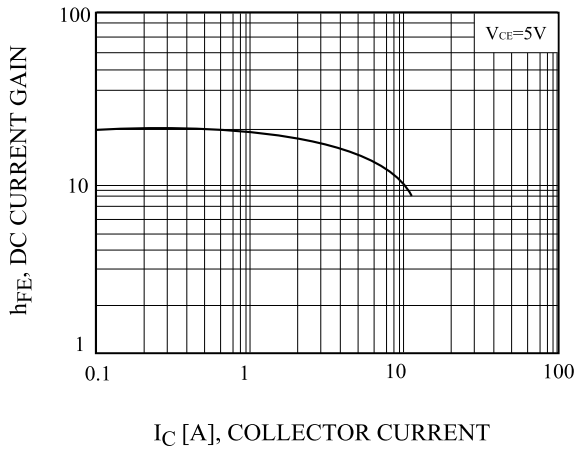


Fig.2 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

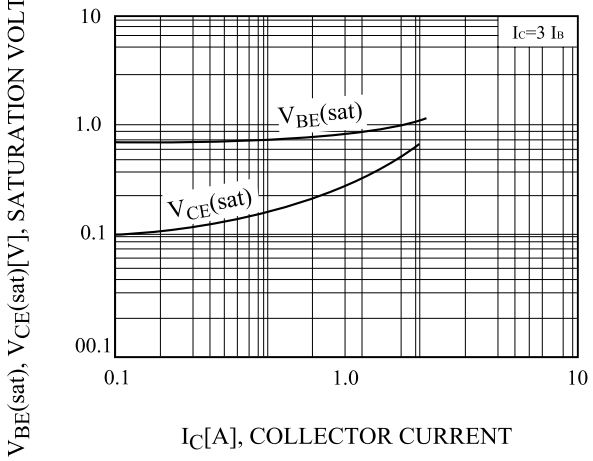


Fig.3. Collector Output Capacitance

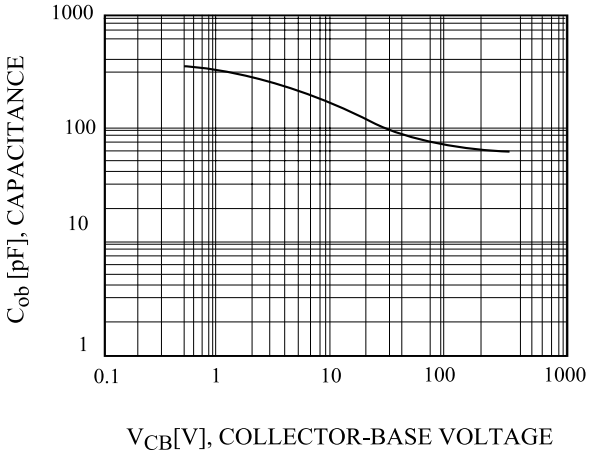


Fig.4 Turn Off Time

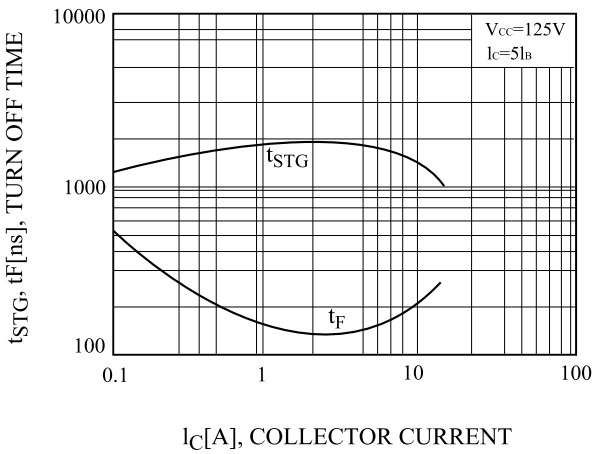


Fig.5 Forward Bias Safe Operating Area