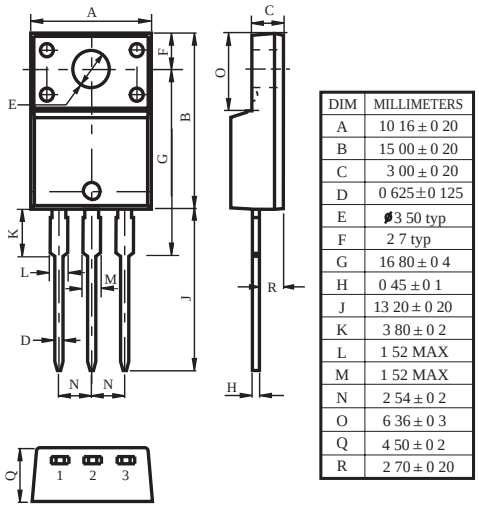
MJE13007F TRANSISTOR (NPN)

SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE SWITCHING APPLICATION.
HIGH SPEED DC- DC CONVERTER APPLICATION.
FLUORESCENT LIGHT BALLASTOR APPLICATION.



DIM	MILLIMETERS
A	10 16 ± 0 20
B	15 00 ± 0 20
C	3 00 ± 0 20
D	0 625±0 125
E	ø3 50 typ
F	2 7 typ
G	16 80 ± 0 4
H	0 45 ± 0 1
J	13 20 ± 0 20
K	3 80 ± 0 2
L	1 52 MAX
M	1 52 MAX
N	2 54 ± 0 2
O	6 36 ± 0 3
Q	4 50 ± 0 2
R	2 70 ± 0 20

1. Base
2. Collector
3. Emitter

TO-220F

FEATURES

High Collector Voltage : V_{CBO} =700V.

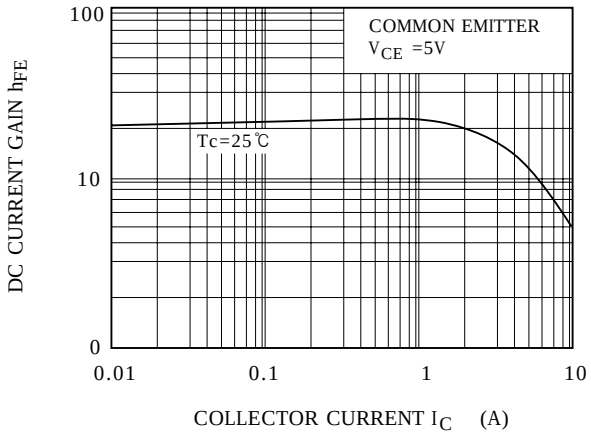
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current -Continuous	8	A
P_C	Collector Power Dissipation	2	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~150	℃

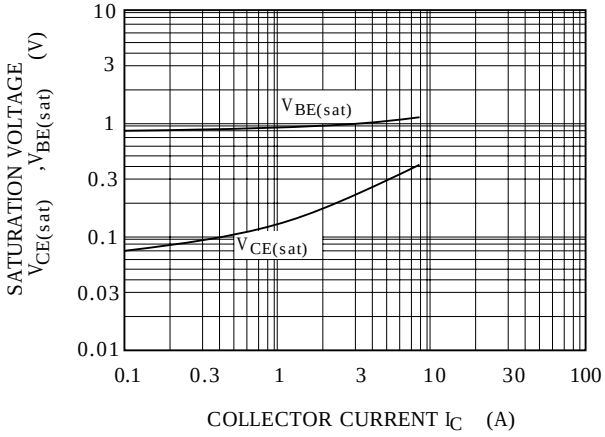
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 1mA,I_E=0	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA,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			100	μA
Collector cut-off current	I_{CEO}	V_{CE}=400V,I_B=0			100	μA
Emitter cut-off current	I_{EBO}	V_{EB}=9V,I_C=0			100	μA
DC current gain	$h_{FE(1)}$	V_{CE}=5V, I_C=2A	19		36	
	$h_{FE(2)}$	V_{CE}=5V, I_C=8A	5			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=2A,I_B=0.4A			1	V
	$V_{CE(sat)2}$	I_C=5A,I_B=1A			2	V
	$V_{CE(sat)3}$	I_C=8A,I_B=2A			3	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	I_C=2A,I_B=0.4A			1.2	V
	$V_{BE(sat)2}$	I_C=5A,I_B=1A			1.6	V
Storage time	t_S	I_C=500mA (UI9600)	3		4	μs
Fall time	t_f	I_C=500mA (UI9600)			0.5	μs
Transition frequency	f_T	V_{CE}=10V, I_C=0.5A,f=1MHz	4			MHz

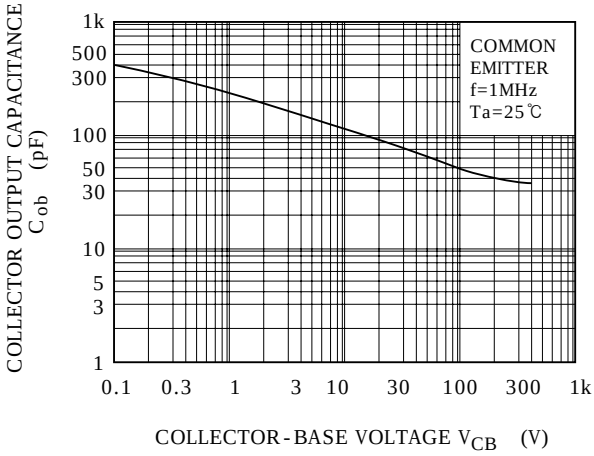
h_{FE} - I_C



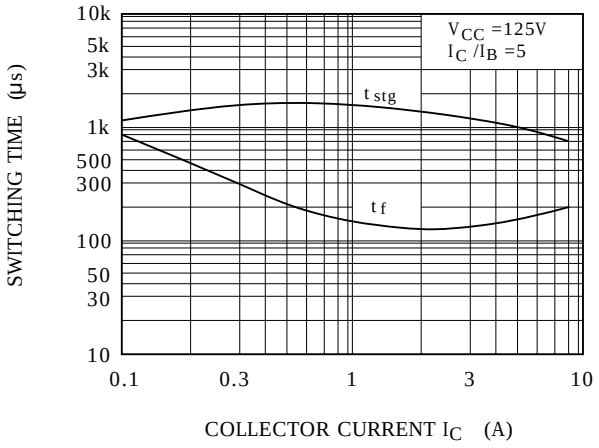
$V_{CE(sat)}$ $V_{BE(sat)}$ - I_C



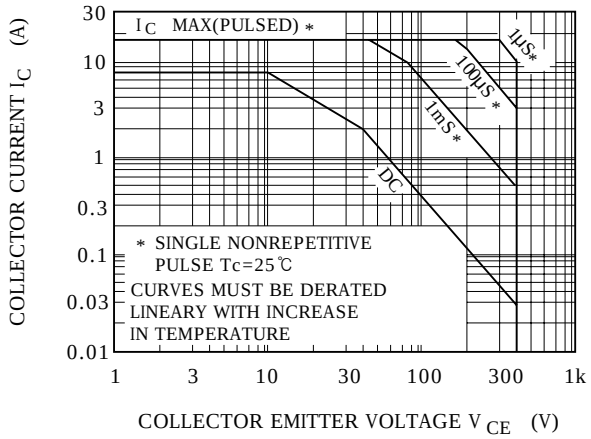
C_{ob} - V_{CB}



SWITCHING CHARACTERISTIC



SAFE OPERATING AREA



P_C - Ta