

MJE13007F TRANSISTOR (NPN)

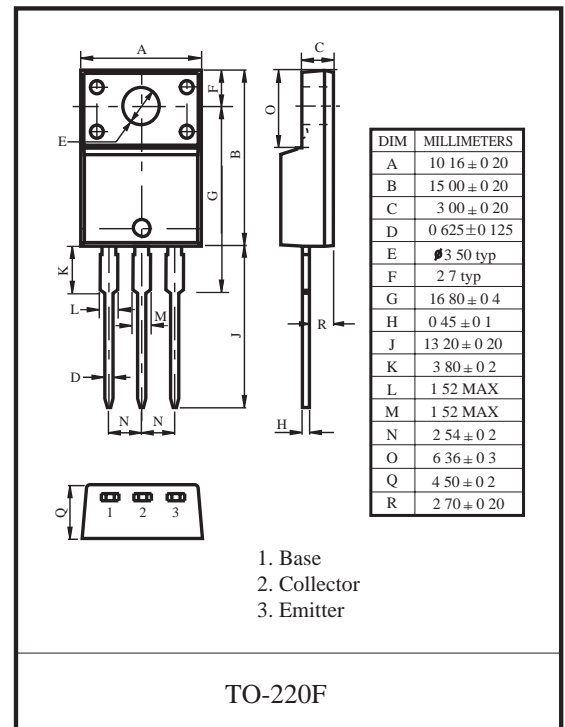
SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE SWITCHING APPLICATION.
HIGH SPEED DC-DC CONVERTER APPLICATION.
FLUORESCENT LIGHT BALLASTOR APPLICATION.

FEATURES

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

MAXIMUM RATINGS ($T_a=25^\circ C$ 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	$^\circ C$
T_{stg}	Storage Temperature	-55~150	$^\circ C$

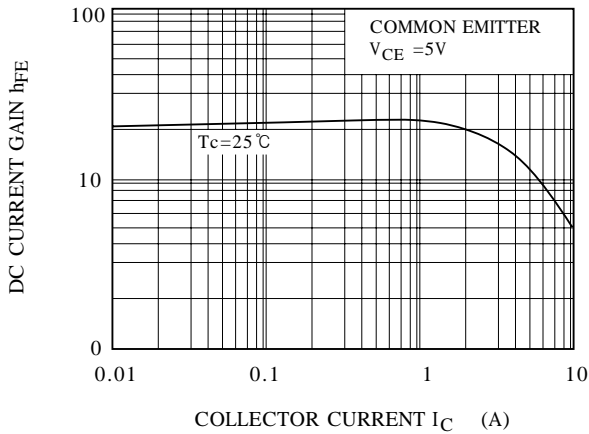


ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$ unless otherwise specified)

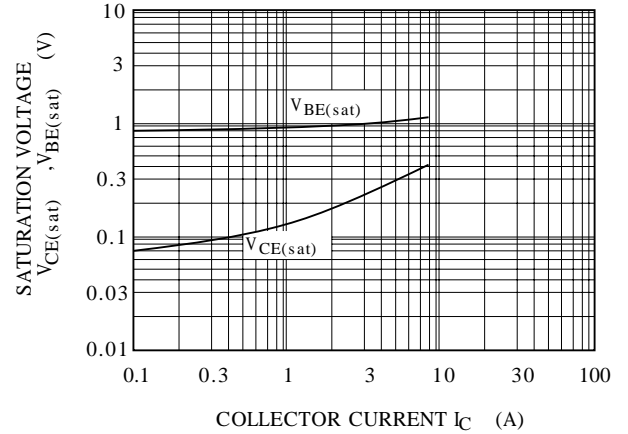
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	9			V
Collector cut-off current	I_{CBO}	$V_{CB}=700V, I_E=0$			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



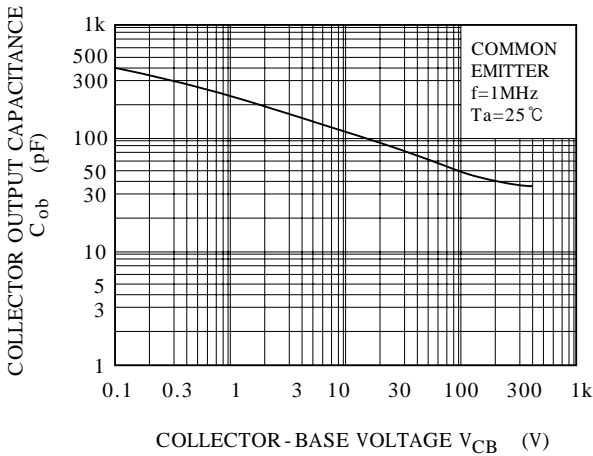
$h_{FE} - I_C$



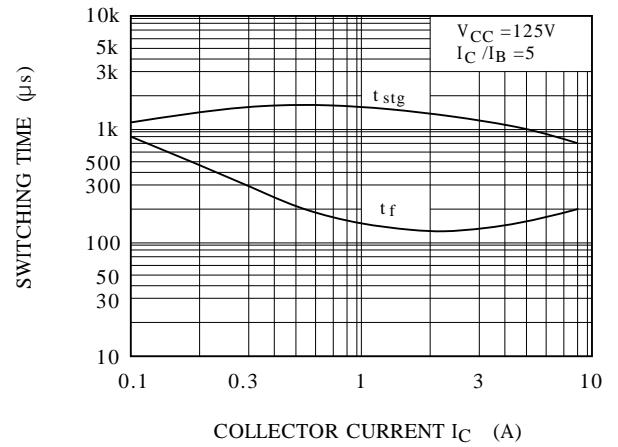
$V_{CE(sat)} - V_{BE(sat)} - I_C$



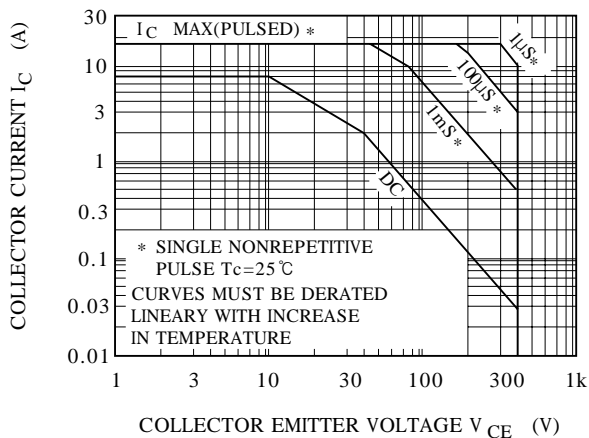
$C_{ob} - V_{CB}$



SWITCHING CHARACTERISTIC



SAFE OPERATING AREA



$P_C - T_a$

