

### MJE13007F TRANSISTOR (NPN)

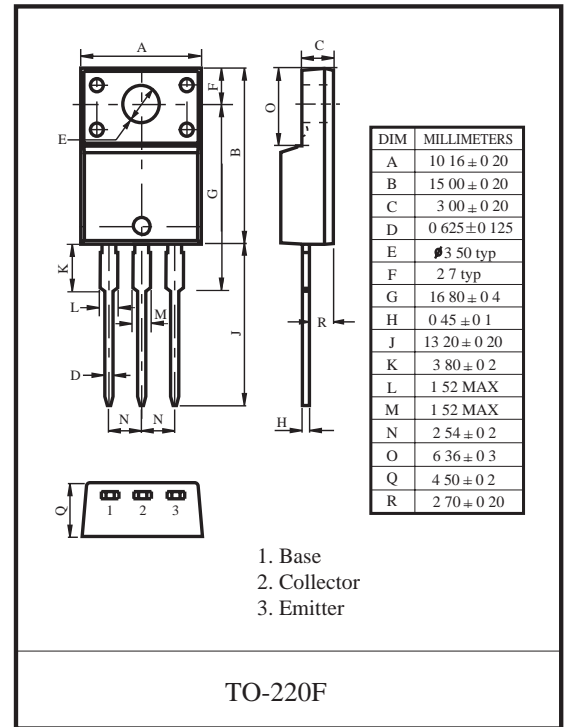
SWITCHING REGULATOR APPLICATION.  
HIGH VOLTAGE SWITCHING APPLICATION.  
HIGH SPEED DC-DC CONVERTER APPLICATION.  
FLUORESCENT LIGHT BALLASTOR APPLICATION.

### 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	$^\circ C$

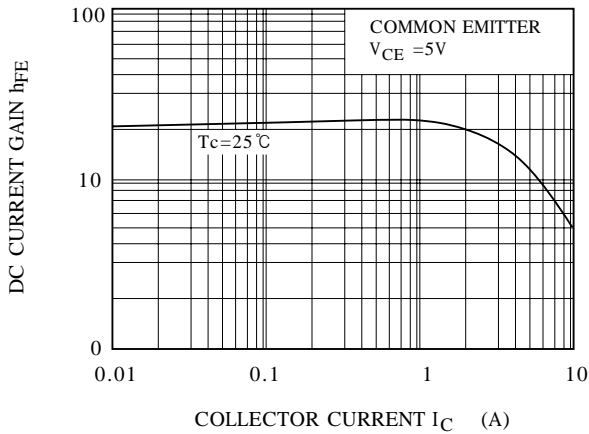


### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ unless otherwise specified)

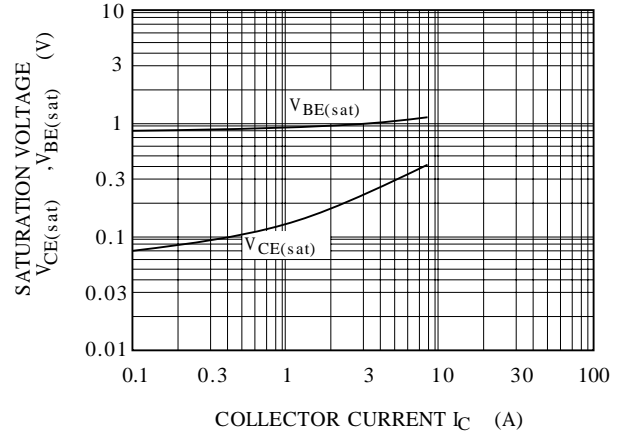
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	9			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=700V, I_E=0$			100	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE}=400V, I_B=0$			100	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=9V, I_C=0$			100	$\mu A$
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	$\mu s$
Fall time	$t_f$	$I_C=500mA$ (UI9600)			0.5	$\mu s$
Transition frequency	$f_T$	$V_{CE}=10V, I_C=0.5A, f=1MHz$	4			MHZ



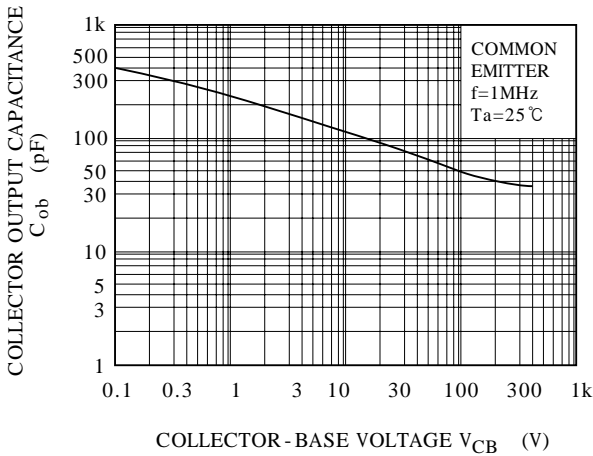
$h_{FE} - I_C$



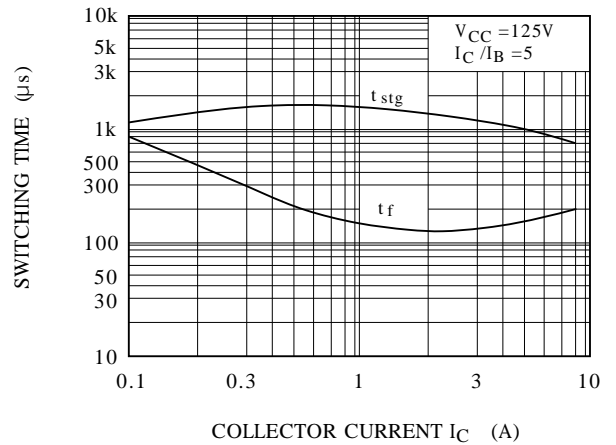
$V_{CE(sat)} - V_{BE(sat)} - I_C$



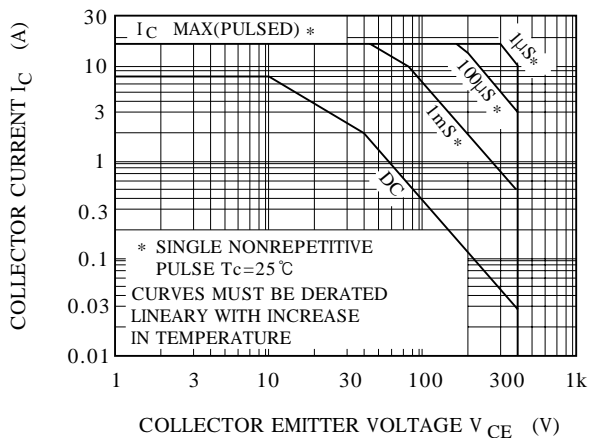
$C_{ob} - V_{CB}$



SWITCHING CHARACTERISTIC



SAFE OPERATING AREA



$P_C - T_a$

