

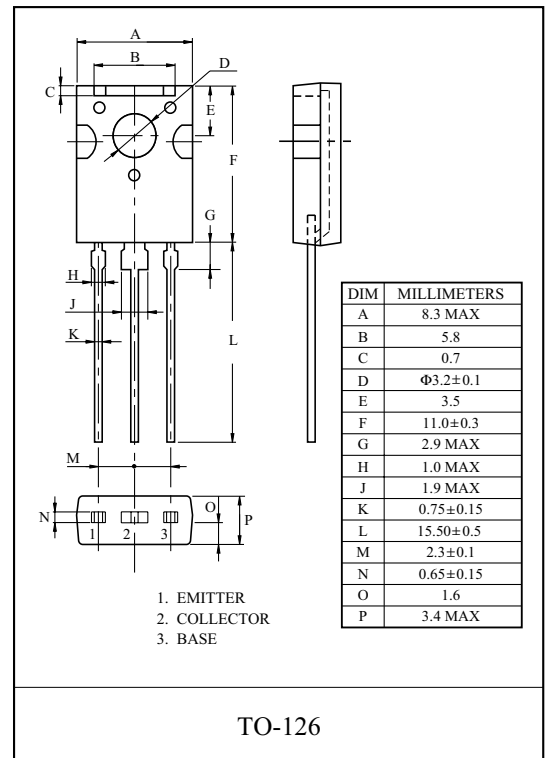
SWITCHING REGULATOR APPLICATION.  
HIGH VOLTAGE AND HIGH SPEED  
SWITCHING APPLICATION.

### FEATURES

- Excellent Switching Times  
:  $t_{on}=1.1\mu\text{s}(\text{Max.})$ ,  $t_f=0.7\mu\text{s}(\text{Max.})$ , at  $I_C=1\text{A}$
- High Collector Voltage :  $V_{CBO}=700\text{V}$ .

### 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
	Pulse	$I_{CP}$	3
Base Current	$I_B$	0.75	A
Collector Power Dissipation (Tc=25 °C)	$P_C$	20	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55 ~ 150	°C



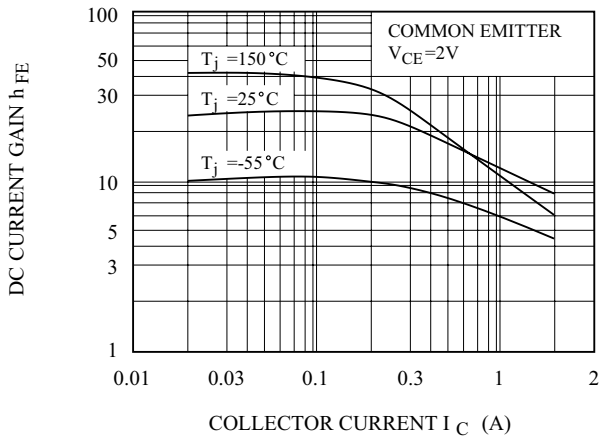
### ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=9\text{V}$ , $I_C=0$	-	-	10	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$ (Note)	$V_{CE}=2\text{V}$ , $I_C=0.5\text{A}$	9	-	38	
	$h_{FE(2)}$	$V_{CE}=2\text{V}$ , $I_C=1\text{A}$	5	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5\text{A}$ , $I_B=0.1\text{A}$	-	-	0.5	V
		$I_C=1\text{A}$ , $I_B=0.25\text{A}$	-	-	1	
		$I_C=1.5\text{A}$ , $I_B=0.5\text{A}$	-	-	3	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5\text{A}$ , $I_B=0.1\text{A}$	-	-	1	V
		$I_C=1\text{A}$ , $I_B=0.25\text{A}$	-	-	1.2	
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $f=0.1\text{MHz}$ , $I_E=0$	-	21	-	pF
Transition Frequency	$f_T$	$V_{CE}=10\text{V}$ , $I_C=0.1\text{A}$	4	-	-	MHz
Turn-On Time	$t_{on}$	<p><math>I_{B1}=I_{B2}=0.2\text{A}</math> DUTY CYCLE <math>\leq 2\%</math></p>	-	-	1.1	$\mu\text{s}$
Storage Time	$t_{stg}$		-	-	4.0	$\mu\text{s}$
Fall Time	$t_f$		-	-	0.7	$\mu\text{s}$

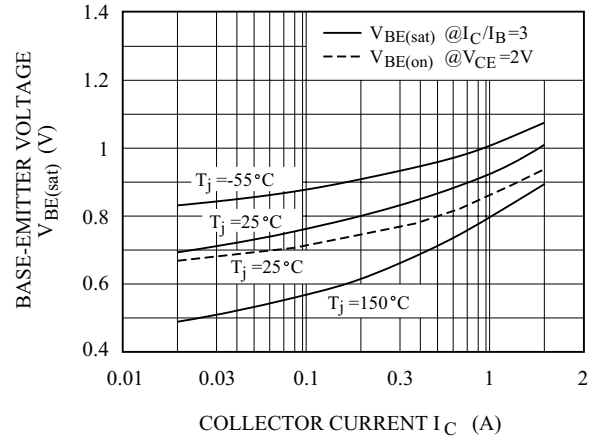
Note :  $h_{FE}$  Classification R:9~15, O:13~21, Y:20~38

# MJE13003

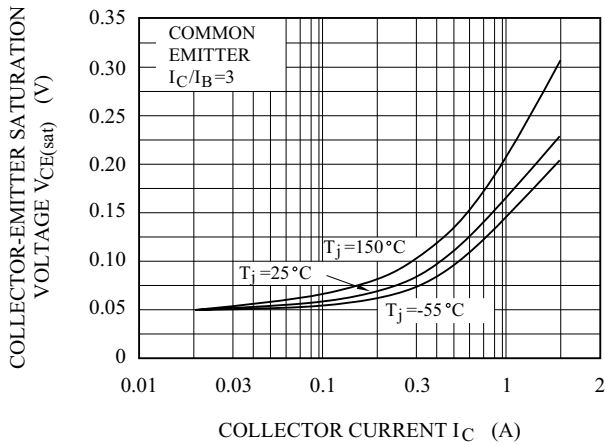
### DC CURRENT GAIN



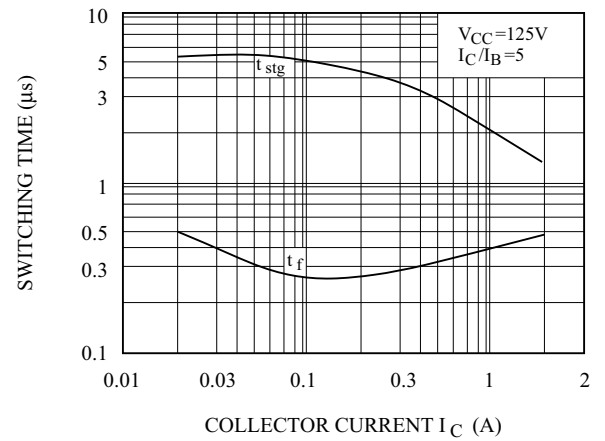
### $V_{BE(sat)} - I_C$



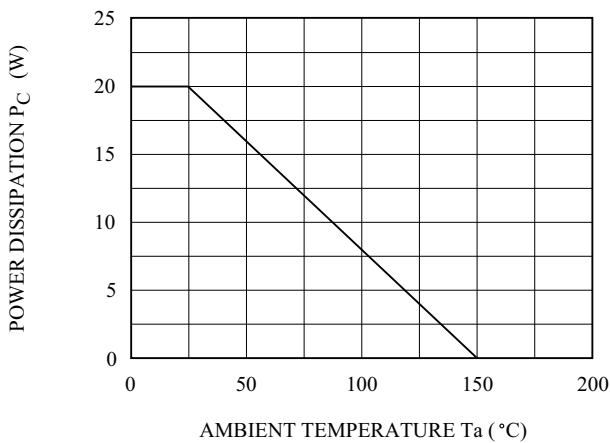
### $V_{CE(sat)} - I_C$



### SWITCHING CHARACTERISTIC



### $P_C - T_a$



### SAFE OPERATING AREA

