

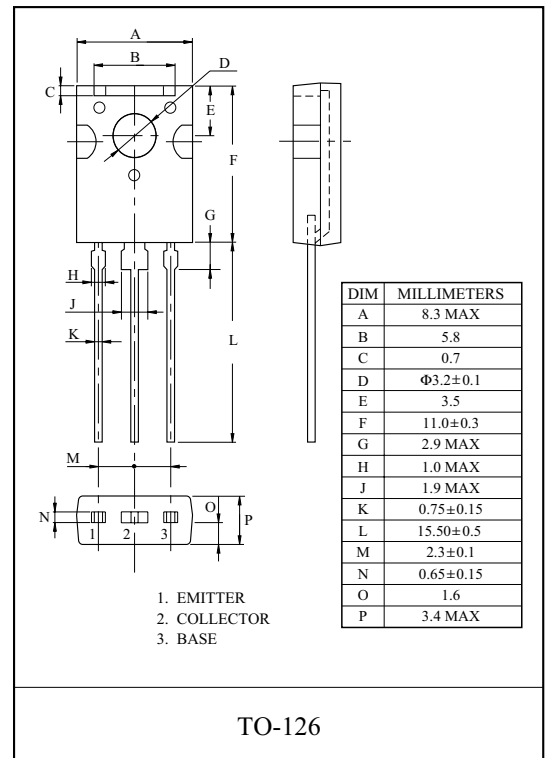
SWITCHING REGULATOR APPLICATION.  
HIGH VOLTAGE AND HIGH SPEED  
SWITCHING APPLICATION.

### FEATURES

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

### 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	$I_C$	A
	Pulse	$I_{CP}$	
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

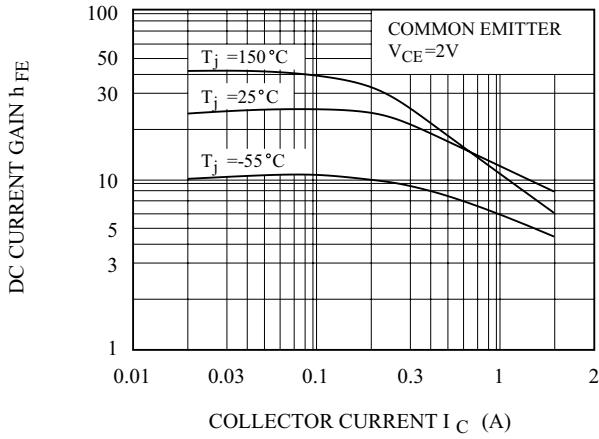


### ELECTRICAL CHARACTERISTICS (Ta=25 °C)

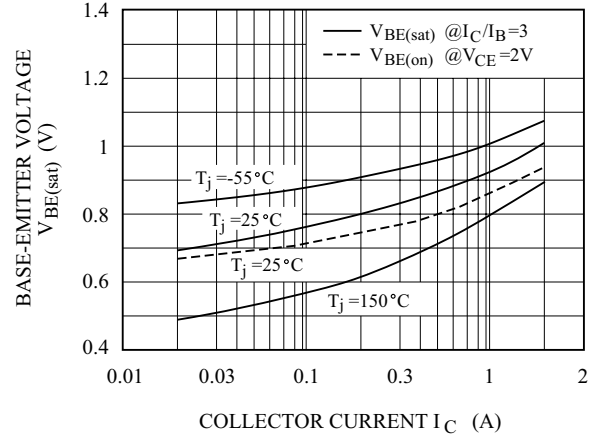
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=9V$ , $I_C=0$	-	-	10	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2V$ , $I_C=0.5A$	8	-	40	
	$h_{FE(2)}$	$V_{CE}=2V$ , $I_C=1A$	5	-	25	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A$ , $I_B=0.1A$	-	-	0.5	V
		$I_C=1A$ , $I_B=0.25A$	-	-	1	
		$I_C=1.5A$ , $I_B=0.5A$	-	-	3	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5A$ , $I_B=0.1A$	-	-	1	V
		$I_C=1A$ , $I_B=0.25A$	-	-	1.2	
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V$ , $f=0.1MHz$ , $I_E=0$	-	21	-	pF
Transition Frequency	$f_T$	$V_{CE}=10V$ , $I_C=0.1A$	4	-	-	MHz
Turn-On Time	$t_{on}$	<p><math>I_{B1}=I_{B2}=0.2A</math> DUTY CYCLE <math>\leq 2\%</math></p>	-	-	1.1	$\mu S$
Storage Time	$t_{stg}$		-	-	4.0	$\mu S$
Fall Time	$t_f$		-	-	0.7	$\mu S$

# MJE13003

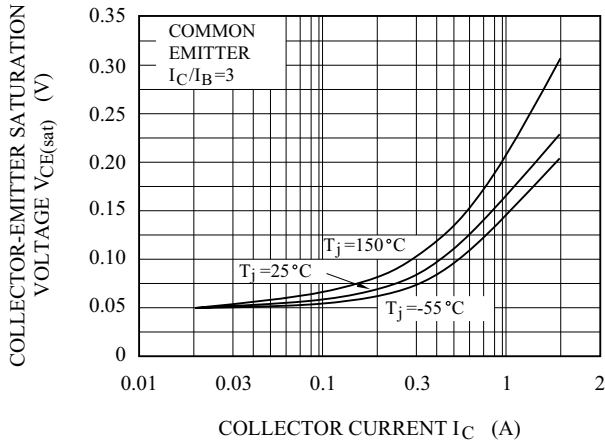
DC CURRENT GAIN



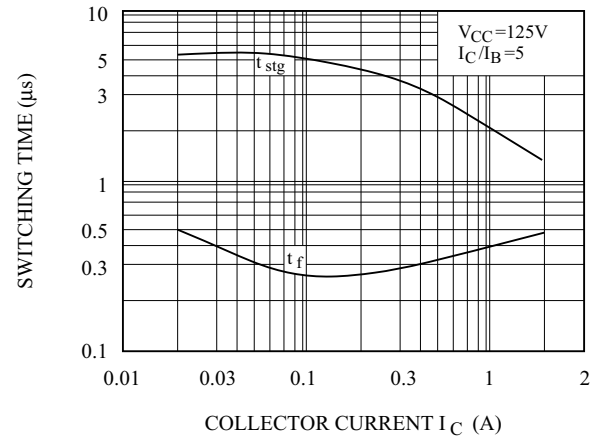
$V_{BE(sat)} - I_C$



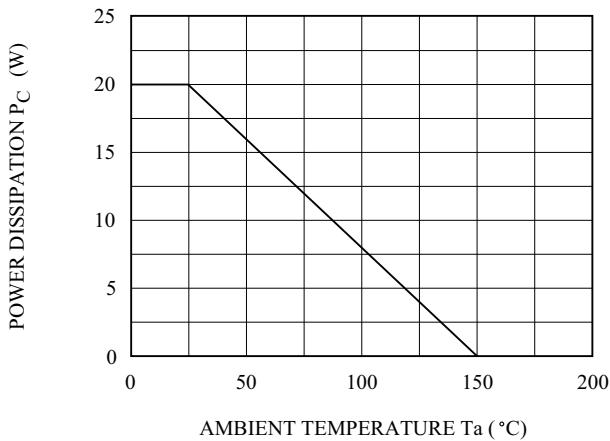
$V_{CE(sat)} - I_C$



SWITCHING CHARACTERISTIC



$P_C - T_a$



SAFE OPERATING AREA

