

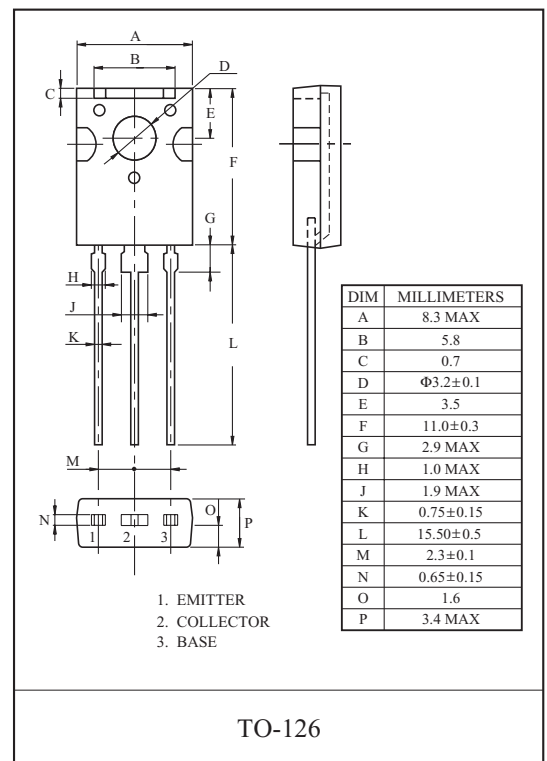
SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE AND HIGH SPEED
SWITCHING APPLICATION.

FEATURES

- Excellent Switching Times
: $t_{on}=1.1/\mu s$ (Typ.), $t_r=0.7/\mu s$ (Typ.), at $I_C=1A$
- High Collector Voltage : $V_{CBO}=900V$.

MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	900	V
Collector-Emitter Voltage		V_{CEO}	530	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	1.5	A
	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



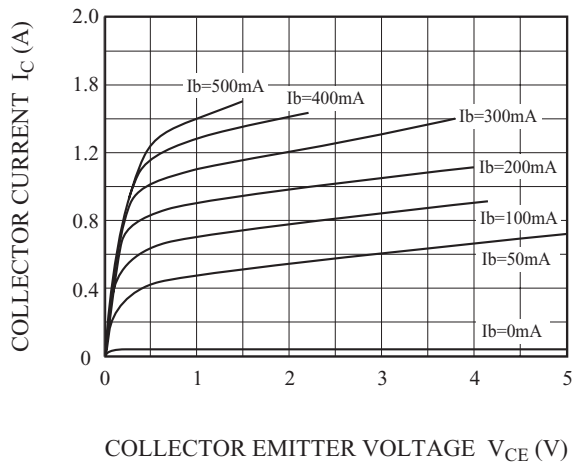
ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V, I_C=0$	-	-	10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=10V, I_C=10mA$	15	-	40	
	$*h_{FE}(2)$	$V_{CE}=10V, I_C=0.4A$	20	-	40	
	$h_{FE}(3)$	$V_{CE}=10V, I_C=1A$	6	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=0.1A$	-	-	0.8	V
		$I_C=1.5A, I_B=0.5A$	-	-	2.5	
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}	$I_{B1}=I_{B2}=0.2A$ DUTY CYCLE $\leq 2\%$	-	1.1	-	μs
Storage Time	t_{stg}		-	3.0	-	μs
Fall Time	t_f		-	0.7	-	μs

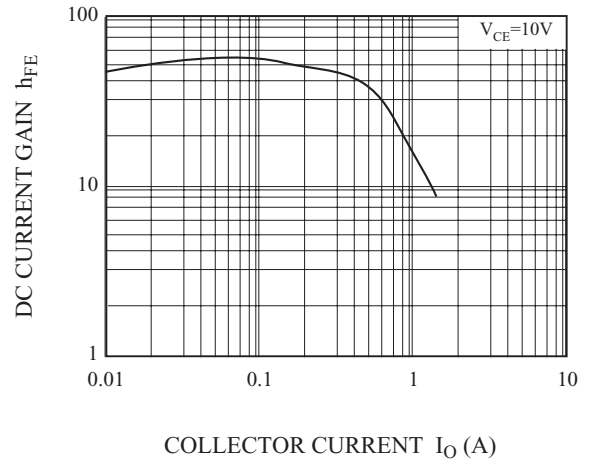
*Note : h_{FE} Classification R:20~35, O:25~40

MJE13003HV

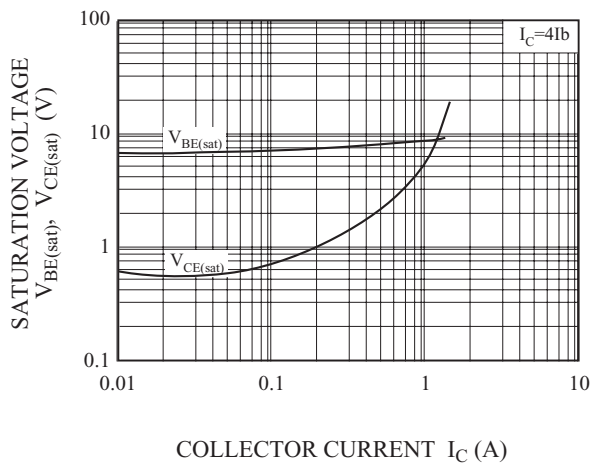
STATIC CHARACTER



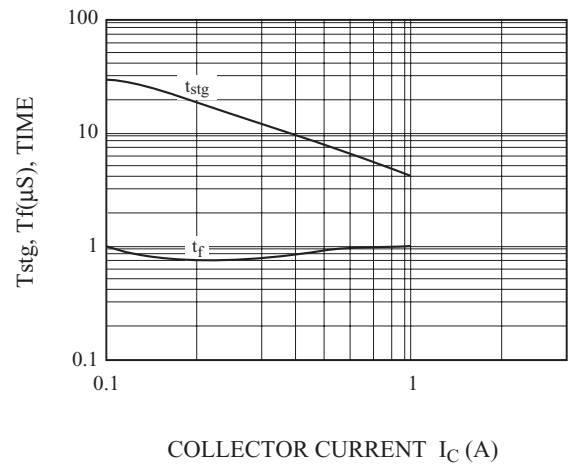
DC CURRENT GAIN



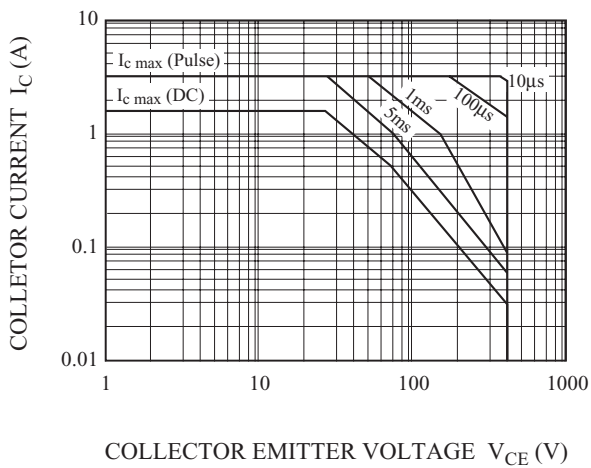
$V_{CE(sat)}$ vs. $V_{BE(sat)}$



SWITCHING TIME



SAFE OPERATING AREA



$P_C - T_a$

