

**SEMICONDUCTOR
TECHNICAL DATA**

MJE13003
TRIPLE DIFFUSED NPN TRANSISTOR

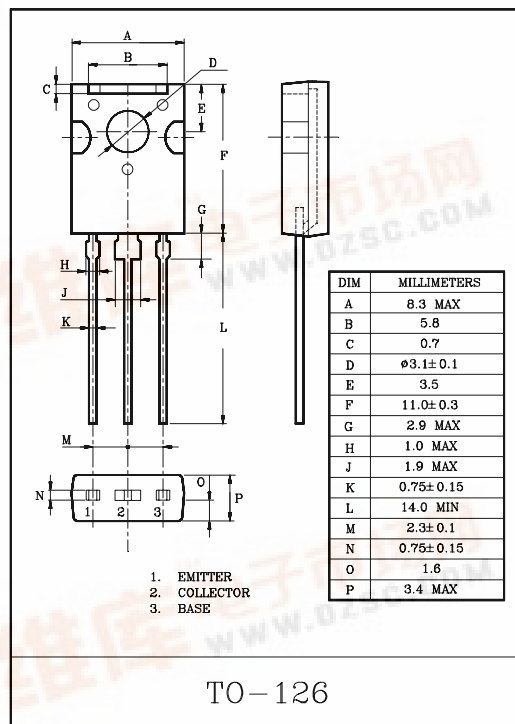
SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE AND HIGH SPEED
SWITCHING APPLICATION.

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 RATINGS (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	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}	-65~150	°C



ELECTRICAL CHARACTERISTICS (Ta=25°C)

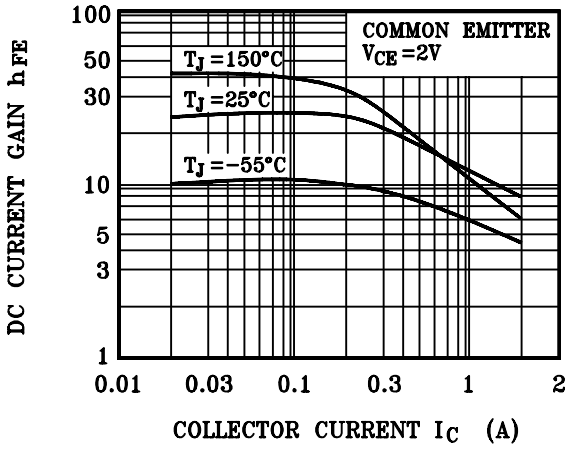
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V, I_C=0$	-	-	10	μA
DC Current Gain	$h_{FE}(1)$ Note	$V_{CE}=2V, I_C=0.5A$	19	-	36	
	$h_{FE}(2)$	$V_{CE}=2V, I_C=1A$	5	-	25	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=0.1A$	-	-	0.5	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}	$V_{CB}=10V, f=0.1MHz$	-	21	-	pF
Transition Frequency	f_T	$V_{CE}=10V, I_C=0.1A$	4	-	-	MHz
Turn-On Time	t_{on}		-	-	1.1	μS
Storage Time	t_{stg}		-	-	4.0	μS
Fall Time	t_f		-	-	0.7	μS

Note : $h_{FE}(1)$ Classification : O:19~28 , Y:26~36

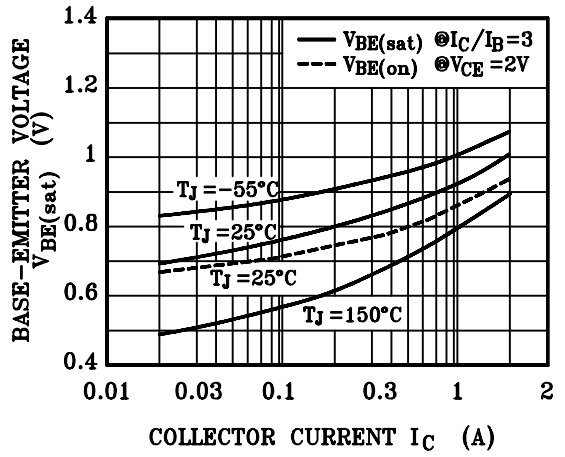


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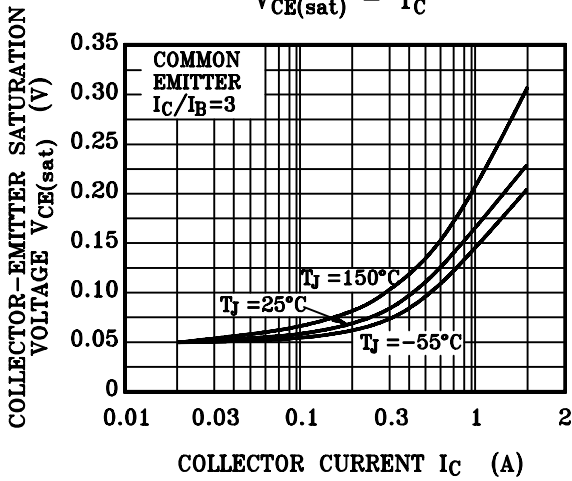
DC CURRENT GAIN



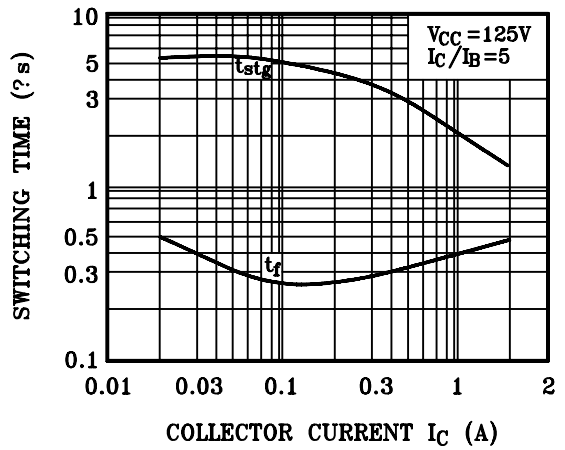
$V_{BE(sat)} - I_C$



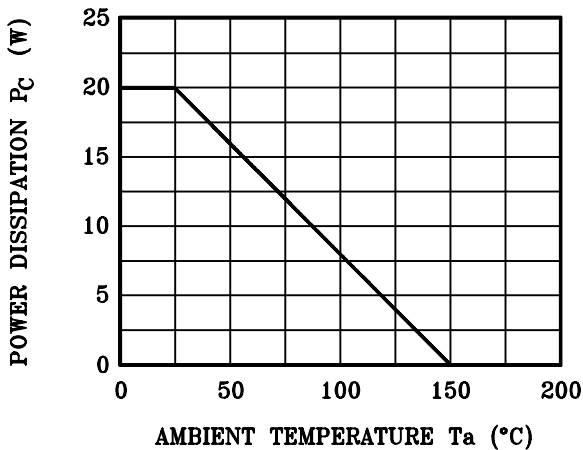
$V_{CE(sat)} - I_C$



SWITCHING CHARACTERISTIC



$P_C - T_a$



SAFE OPERATING AREA

