

SEMICONDUCTOR
TECHNICAL DATA

MJE13005
TRIPLE DIFFUSED NPN TRANSISTOR

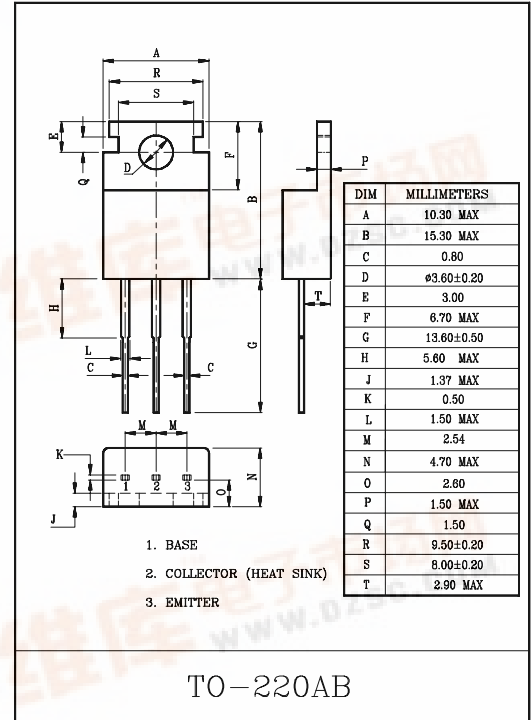
SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE SWITCHING APPLICATION.
HIGH SPEED DC-DC CONVERTER APPLICATION.
FLUORESCENT LIGHT BALLASTOR APPLICATION.

FEATURES

- Excellent Switching Times
: $t_{on}=0.8\mu S(\text{Max.})$, $t_f=0.9\mu S(\text{Max.})$, at $I_C=2A$
- High Collector Voltage : $V_{CBO}=700V$.

MAXIMUM RATINGS ($T_a=25^\circ C$)

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	4	A
	Pulse		8	
Base Current		I_B	2	A
Collector Power Dissipation ($T_c=25^\circ C$)		P_C	75	W
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$



ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

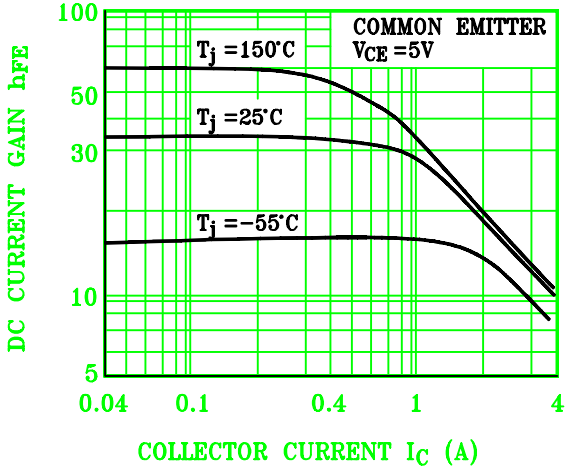
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	I_{EBO}	$V_{EB}=9V$, $I_C=0$	-	-	1	mA
DC Current Gain	$h_{FE(1)}$ Note	$V_{CE}=5V$, $I_C=1A$	19	-	36	
	$h_{FE(2)}$	$V_{CE}=5V$, $I_C=2A$	10	-	30	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A$, $I_B=0.2A$	-	-	0.5	V
		$I_C=2A$, $I_B=0.5A$	-	-	0.6	
		$I_C=4A$, $I_B=1A$	-	-	1	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A$, $I_B=0.2A$	-	-	1.2	V
		$I_C=2A$, $I_B=0.5A$	-	-	1.6	
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$, $f=0.1MHz$	-	65	-	pF
Transition Frequency	f_T	$V_{CE}=10V$, $I_C=0.5A$	4	-	-	MHz
Turn-On Time	t_{on}		-	-	0.8	μS
Storage Time	t_{stg}		-	-	4	μS
Fall Time	t_f		-	-	0.9	μS

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

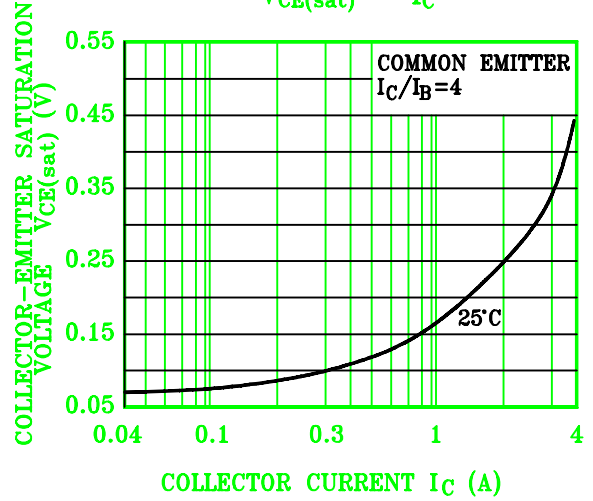


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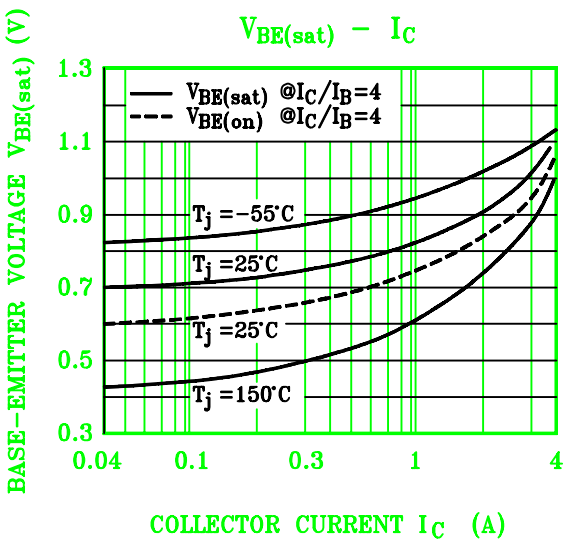
$h_{FE} - I_C$



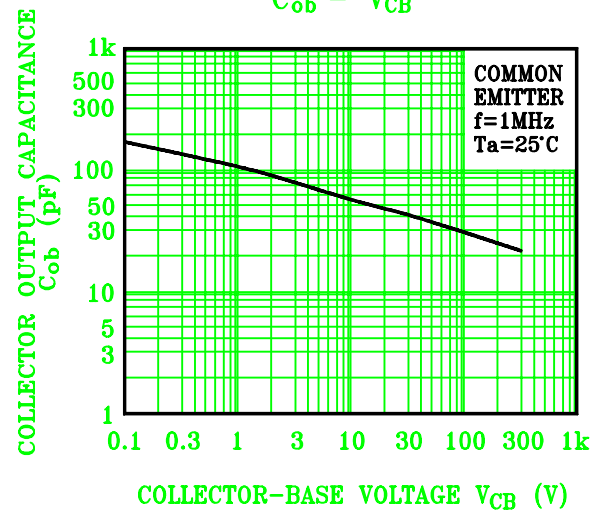
$V_{CE(sat)} - I_C$



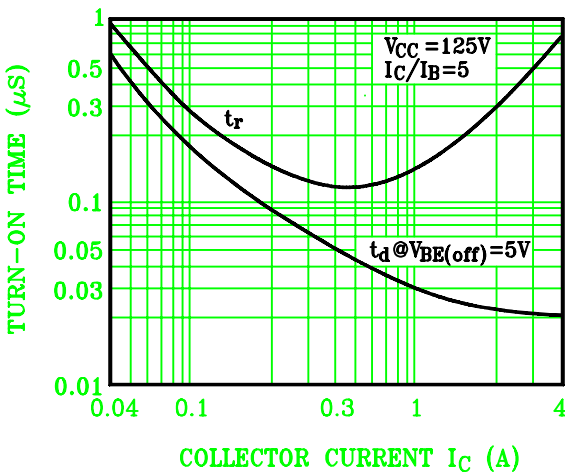
$V_{BE(sat)} - I_C$



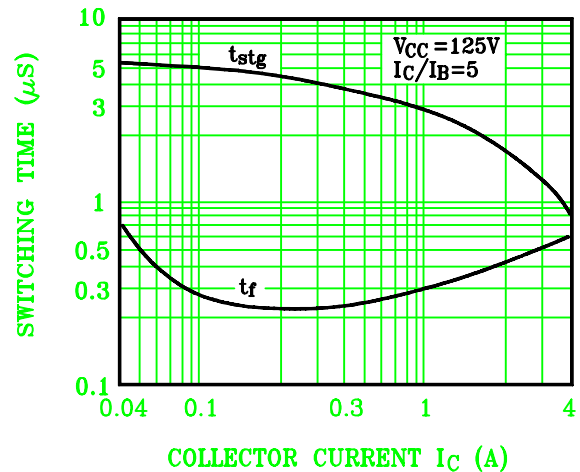
$C_{ob} - V_{CB}$



SWITCHING CHARACTERISTIC

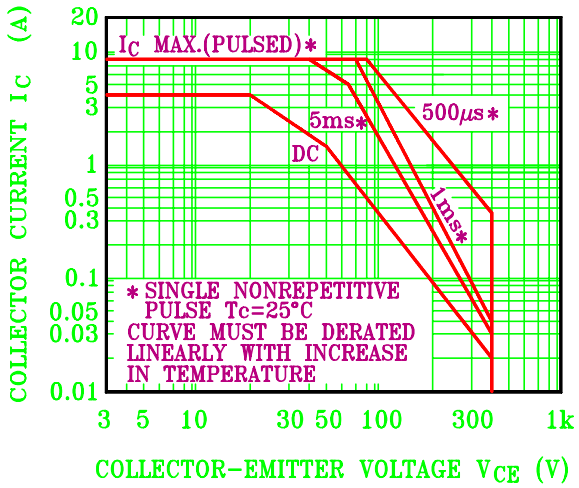


SWITCHING CHARACTERISTIC



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SAFE OPERATING AREA



$P_C - T_a$

