

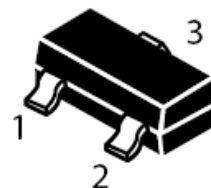
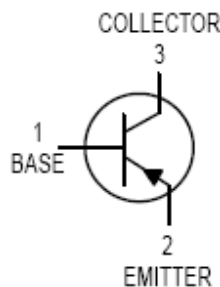
PNP General Purpose Transistor

FEATURES

- Ideal for Medium Power Amplification and Switching
- Complementary PNP Type available(MMST2222A)

MECHANICAL DATA

- Case: SOT-323 Plastic
- Case material: "Green" molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Lead Free in RoHS 2002/95/EC Compliant



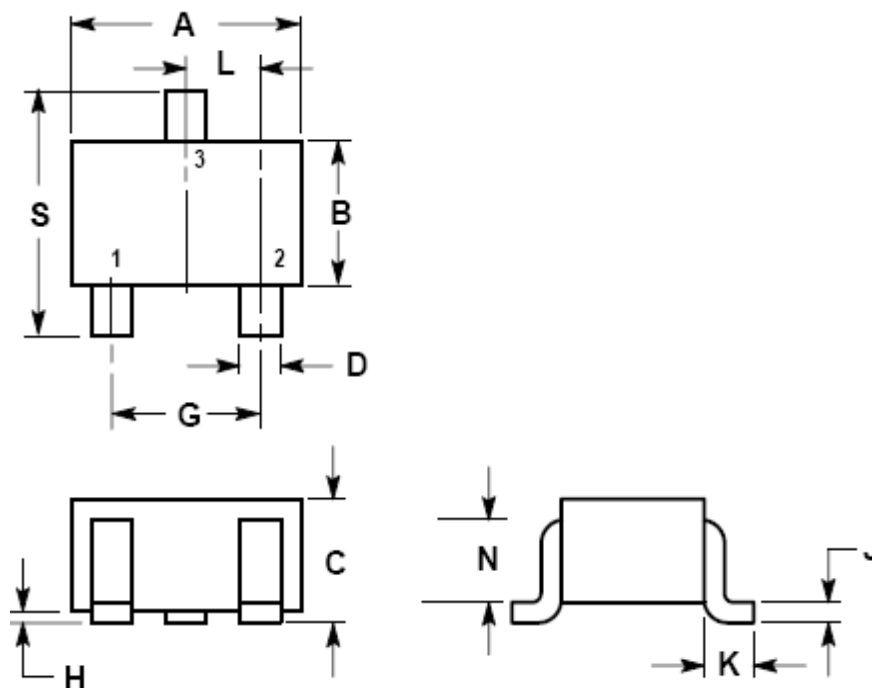
Maximum Ratings @ $T_A = 25^\circ\text{C}$

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current -Continuous	I_C	-600	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance, junction to Ambient	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$I_C = -10\mu\text{A}, I_E = 0$	V_{CBO}	-60			V
Collector-emitter breakdown voltage	$I_C = -10\text{mA}, I_B = 0$	V_{CEO}	-60			V
Emitter-base breakdown voltage	$I_E = -10\mu\text{A}, I_C = 0$	V_{EBO}	-5			V
Collector-base cut-off current	$V_{CB} = -50\text{V}, I_E = 0$	I_{CBO}			-100	nA
Collector-emitter cut-off current	$V_{CE} = -30\text{V}, I_B = 0$	I_{CEO}			-100	nA
Emitter-base cut-off current	$V_{EB} = -3\text{V}, I_C = 0$	I_{EBO}			-100	nA
DC current gain	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	h_{FE1}	75			
	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	h_{FE2}	100			
	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	h_{FE3}	100			
	$V_{CE} = -10\text{V}, I_C = -150\text{mA}$	h_{FE4}	100		300	
	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$	h_{FE5}	50			
Collector-emitter saturation voltage	$I_C = -150\text{mA}, I_B = -15\text{mA}$	$V_{CE(sat)1}$			-0.4	V
	$I_C = -500\text{mA}, I_B = -50\text{mA}$	$V_{CE(sat)2}$			-1.6	V
Base-emitter saturation voltage	$I_C = -150\text{mA}, I_B = -15\text{mA}$	$V_{BE(sat)1}$			-1.3	V
	$I_C = -500\text{mA}, I_B = -50\text{mA}$	$V_{BE(sat)2}$			-2.6	V
Transition frequency	$V_{CE} = -20\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	f_T	200			MHz
Output capacitance	$V_{CB} = -10\text{V}, I_E = 0, f = 0.1\text{MHz}$	C_{obo}			8	pF
Input capacitance	$V_{EB} = -2\text{V}, I_C = 0, f = 0.1\text{MHz}$	C_{ib}			30	pF
Delay time	$V_{CC} = -30\text{V}, V_{BE(off)} = -1.5\text{V}, I_C = -150\text{mA}, I_{B1} = -15\text{mA}$	T_d			10	nS
Rise time		T_r			40	nS
Storage time	$V_{CC} = -30\text{V}, I_C = -150\text{mA}$	T_s			80	nS
Fall time	$I_{B1} = -I_{B2} = -15\text{mA}$	T_f			30	nS

SOT-323 Outline Dimension



Symbol	Dimension In Millimeters	
	Min	Max.
A	1.80	2.20
B	1.15	1.35
C	0.80	1.00
D	0.30	0.40
G	1.20	1.40
H	0.00	0.10
J	0.10	0.25
K	0.425 REF	
L	0.650 BSC	
N	0.700 REF	
S	2.00	2.40

Device Marking :

Device P/N	Marking code
MMST2907A	20

Electrical characteristic curves

Fig.1 Grounded Emitter Output Characteristics

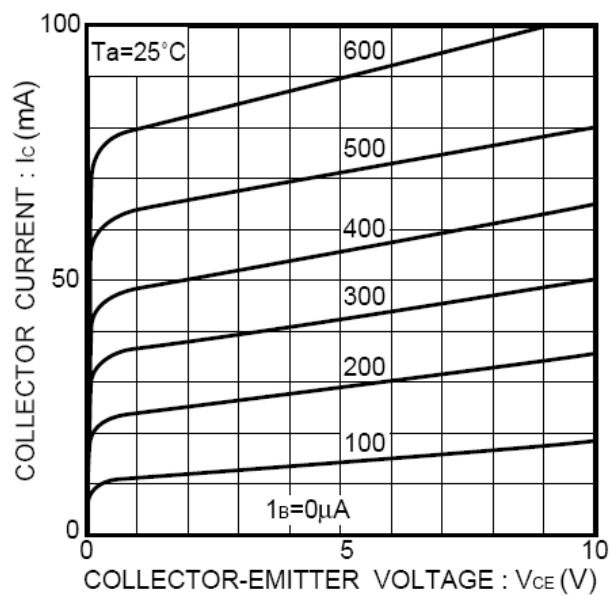


Fig.2 Base-Emitter Saturation Voltage vs. Collector Current

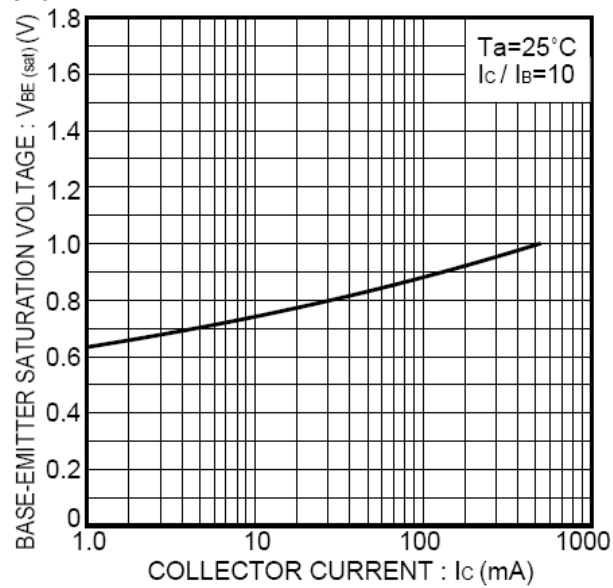


Fig.3 DC Current Gain vs. Collector Current (I)

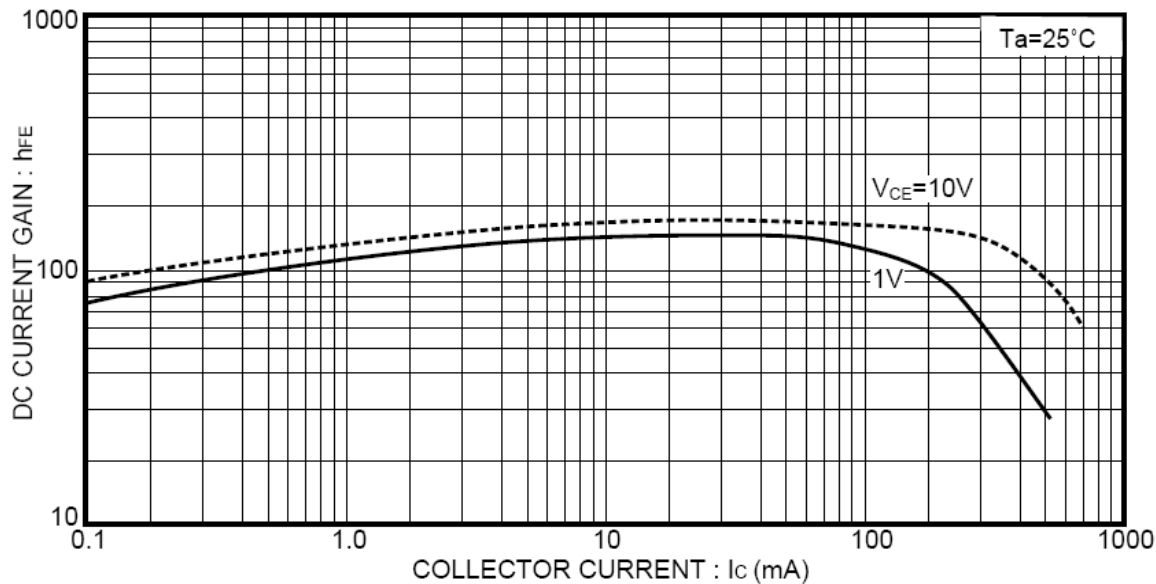


Fig.4 DC Current Gain vs. Collector Current (II)

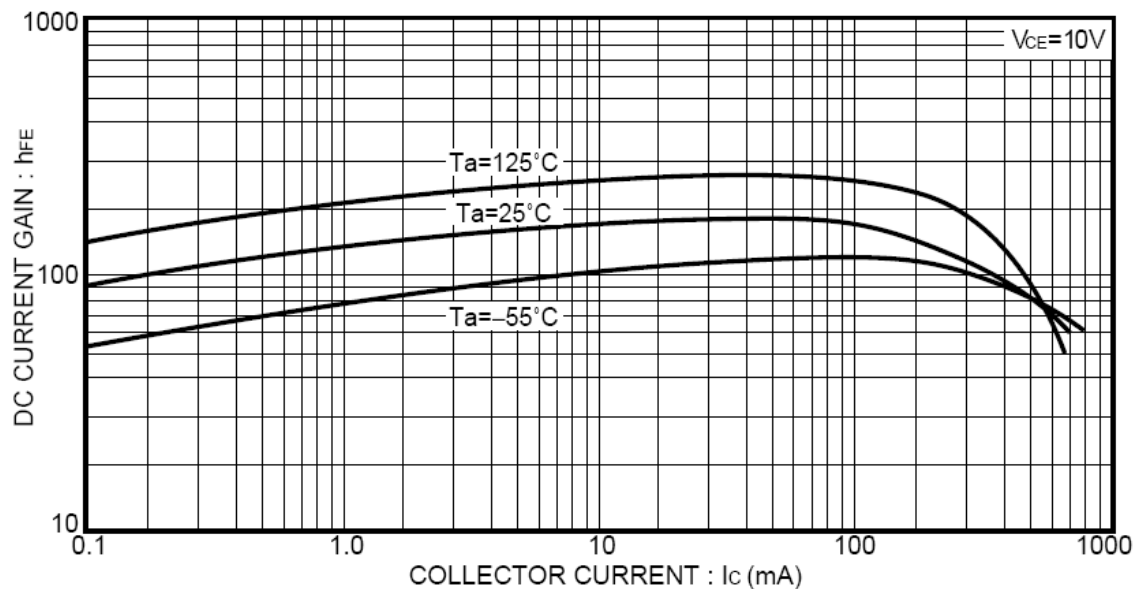


Fig.5 AC Current Gain vs. Collector Current

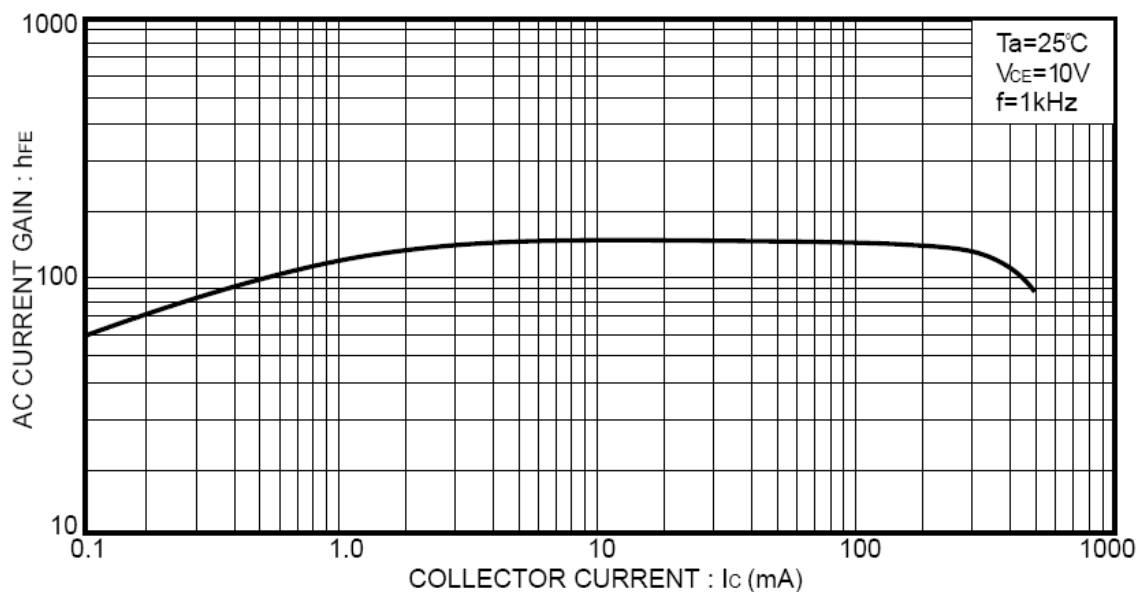


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current

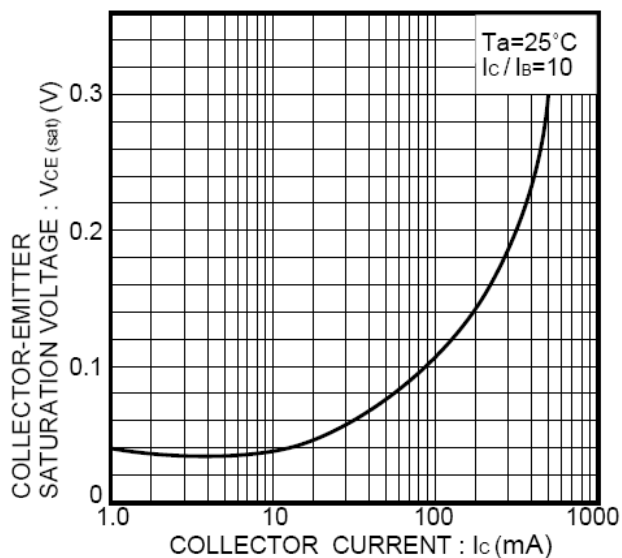


Fig.7 Grounded Emitter Propagation Characteristics

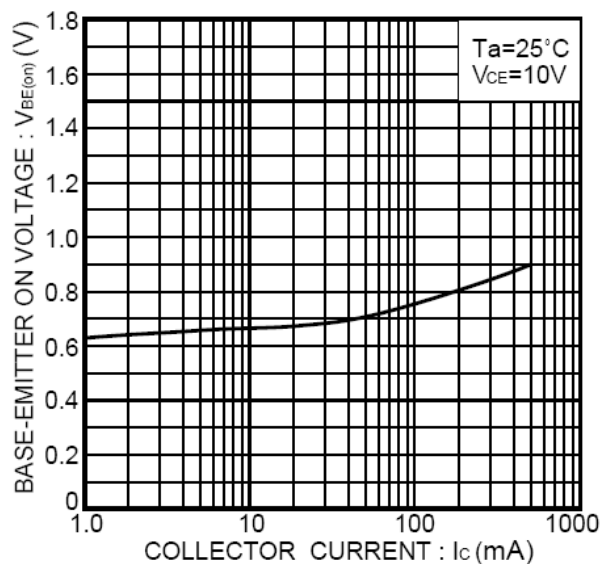


Fig.8 Gain Bandwidth Product vs. Collector Current

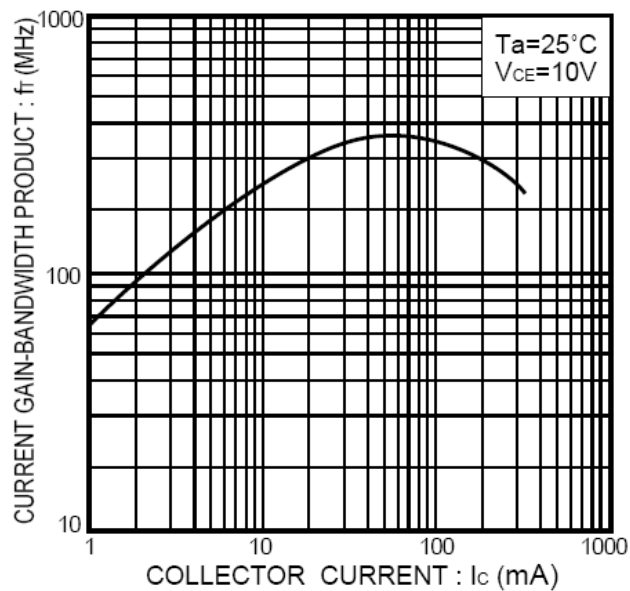


Fig.9 Gain Bandwidth Product

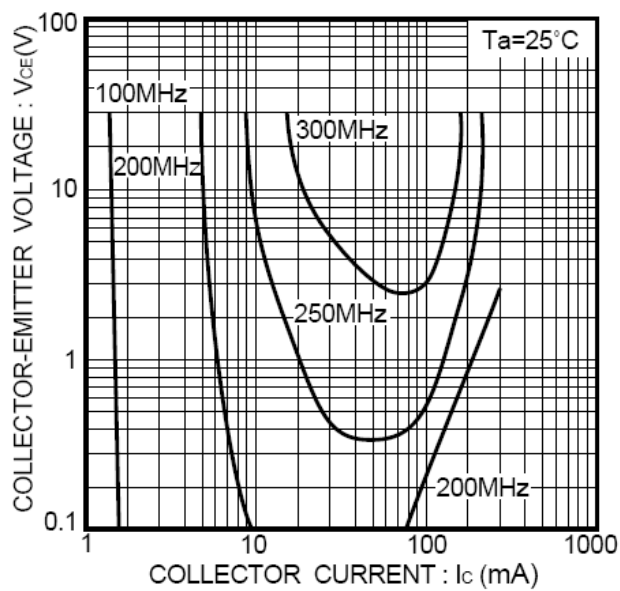


Fig.10 Input/Output Capacitance vs. Voltage

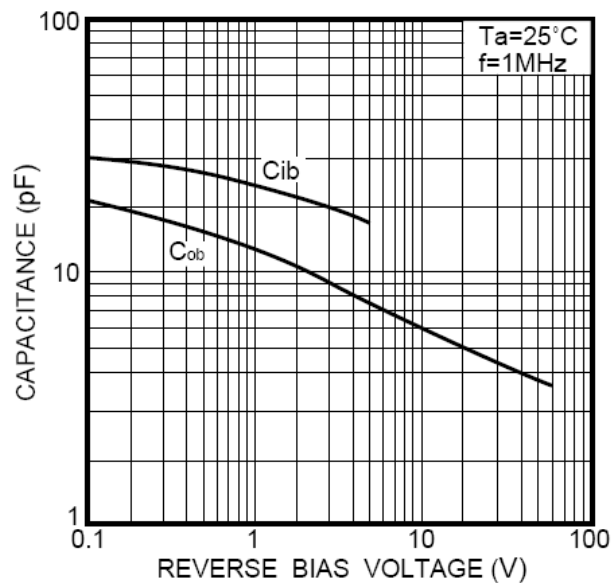


Fig.11 Turn-on Time vs. Collector Current

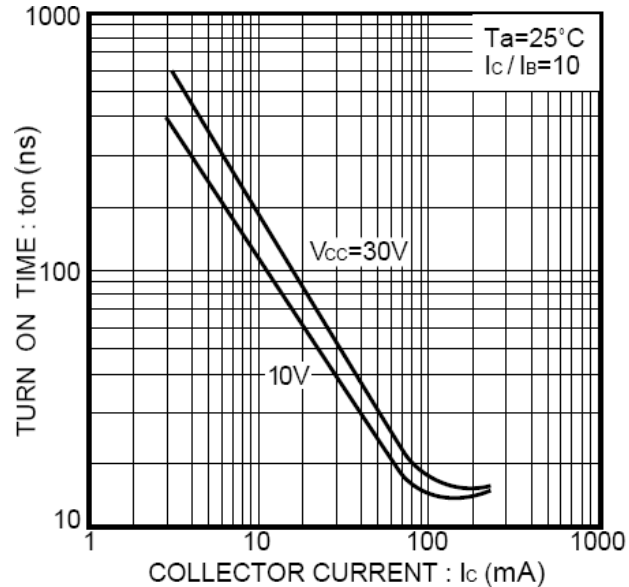


Fig.12 Rise Time vs. Collector Current

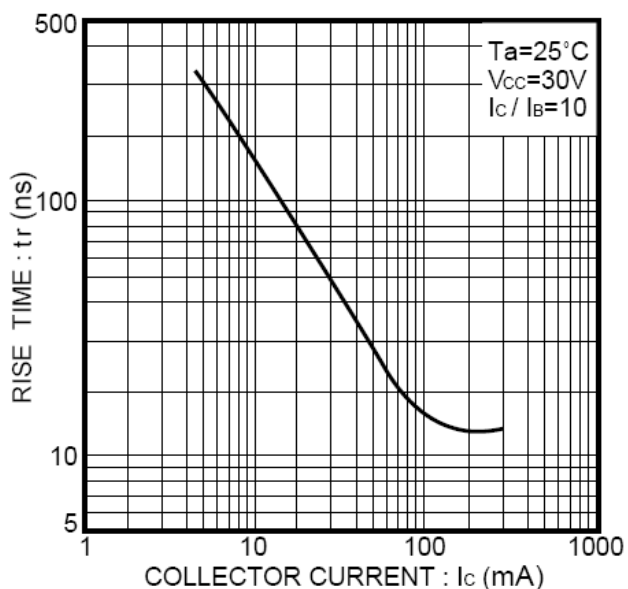


Fig.13 Storage Time vs. Collector Current

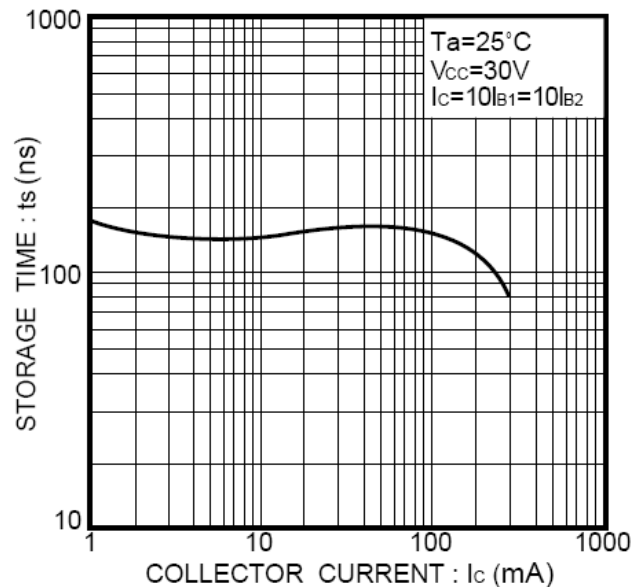
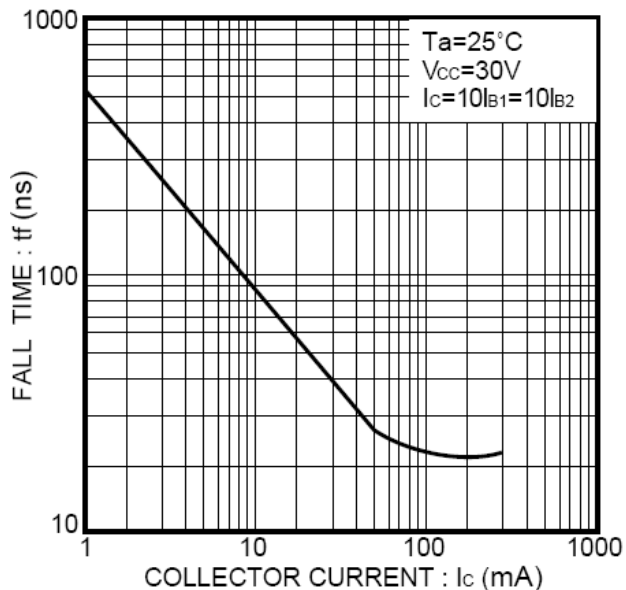


Fig.14 Fall Time vs. Collector Current



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New Marking Rule Notification

Range: In order to have well management in process control, the new marking rule is applied to small signal device including Switching Diode, Transistor and Schottky Diode.

Package: SOT-23 / SOT-323 / SOT-523

