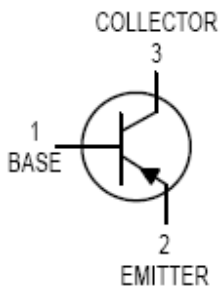
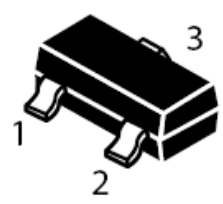


<b>PNP General Purpose Transistor</b>		
<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>• Ideal for Medium Power Amplification and Switching</li> <li>• Complementary NPN Type available(MMST2222A)</li> </ul> <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• Case: SOT-323 Plastic</li> <li>• Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)</li> <li>• Lead Free in RoHS 2002/95/EC and Halogen Free Compliant</li> </ul>		

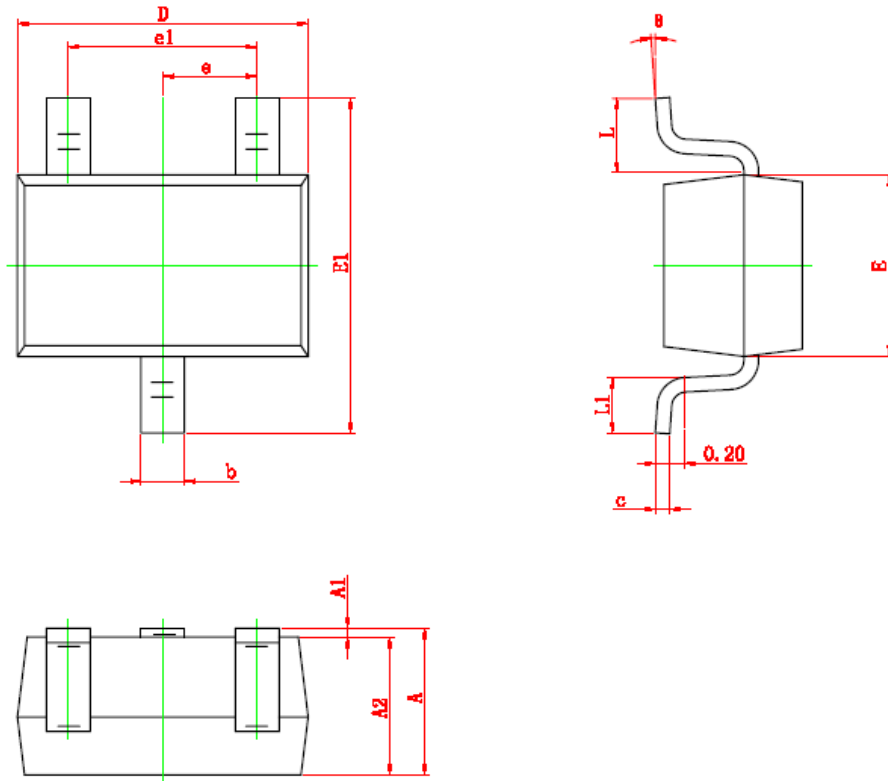
**Maximum Ratings @ T<sub>A</sub> = 25°C**

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current -Continuous	I <sub>C</sub>	-600	mA
Collector Power Dissipation	P <sub>C</sub>	200	mW
Thermal Resistance, junction to Ambient	R <sub>θJA</sub>	500	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-55~+150	°C

**Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified**

Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	I <sub>C</sub> =-10μA, I <sub>E</sub> =0	V <sub>CBO</sub>	-60			V
Collector-emitter breakdown voltage	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	V <sub>CEO</sub>	-60			V
Emitter-base breakdown voltage	I <sub>E</sub> =-10μA, I <sub>C</sub> =0	V <sub>EBO</sub>	-5			V
Collector-base cut-off current	V <sub>CB</sub> =-50V, I <sub>E</sub> =0	I <sub>CBO</sub>			-100	nA
Collector-emitter cut-off current	V <sub>CE</sub> =-30V, I <sub>B</sub> =0	I <sub>CEO</sub>			-100	nA
Emitter-base cut-off current	V <sub>EB</sub> =-3V, I <sub>C</sub> =0	I <sub>EBO</sub>			-100	nA
DC current gain	V <sub>CE</sub> =-10V, I <sub>C</sub> =-0.1mA	h <sub>FE1</sub>	75			
	V <sub>CE</sub> =-10V, I <sub>C</sub> =-1mA	h <sub>FE2</sub>	100			
	V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA	h <sub>FE3</sub>	100			
	V <sub>CE</sub> =-10V, I <sub>C</sub> =-150mA	h <sub>FE4</sub>	100		300	
	V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA	h <sub>FE5</sub>	50			
Collector-emitter saturation voltage	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA	V <sub>CE(sat)1</sub>			-0.4	V
	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA	V <sub>CE(sat)2</sub>			-1.6	V
Base-emitter saturation voltage	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA	V <sub>BE(sat)1</sub>			-1.3	V
	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA	V <sub>BE(sat)2</sub>			-2.6	V
Transition frequency	V <sub>CE</sub> =-20V, I <sub>C</sub> =-50mA, f=100MHz	f <sub>T</sub>	200			MHz
Output capacitance	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=0.1MHz	C <sub>obo</sub>			8	pF
Input capacitance	V <sub>EB</sub> =-2V, I <sub>C</sub> =0, f=0.1MHz	C <sub>ib</sub>			30	pF
Delay time	V <sub>CC</sub> =-30V, V <sub>BE(off)</sub> =-1.5V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =-15mA	T <sub>d</sub>			10	nS
Rise time		T <sub>r</sub>			40	nS
Storage time	V <sub>CC</sub> =-30V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =-I <sub>B2</sub> =-15mA	T <sub>s</sub>			80	nS
Fall time		T <sub>f</sub>			30	nS

## SOT-323 Outline Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
$\theta$	0°	8°	0°	8°

### Device Marking :

Device P/N	Marking code
MMST2907A	K3F

## Electrical characteristic curves

Fig.1 Grounded Emitter Output Characteristics

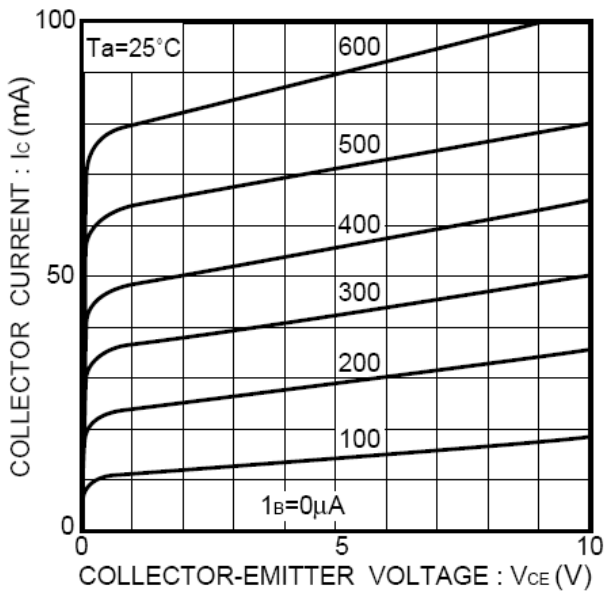


Fig.2 Base-Emitter Saturation Voltage vs. Collector Current

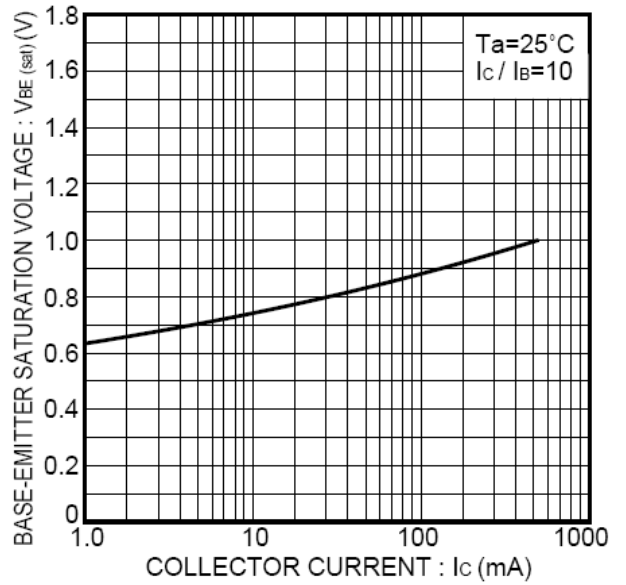


Fig.3 DC Current Gain vs. Collector Current ( I )

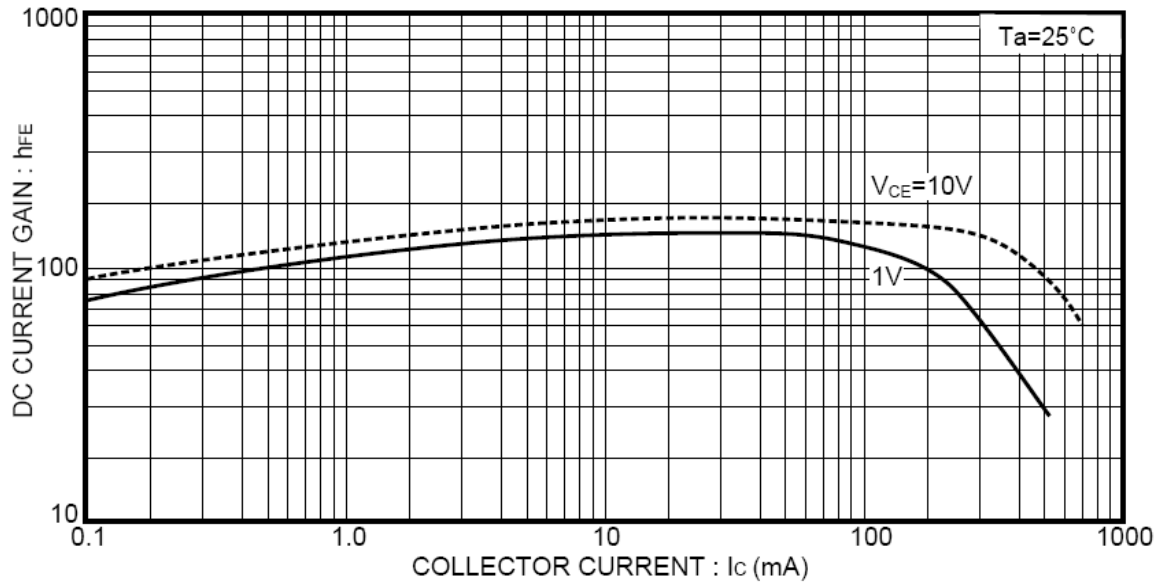
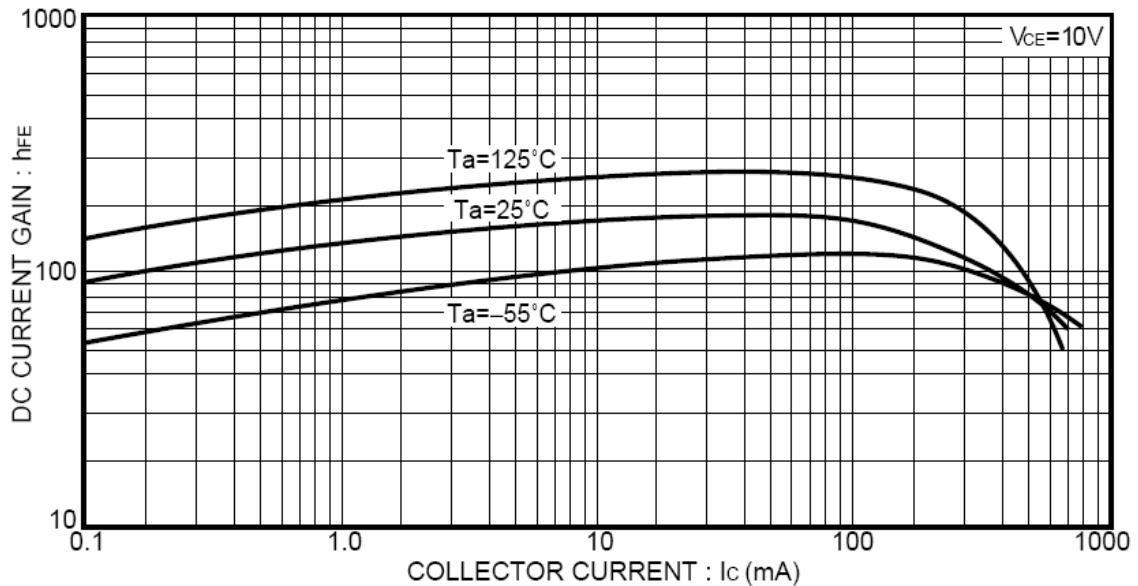
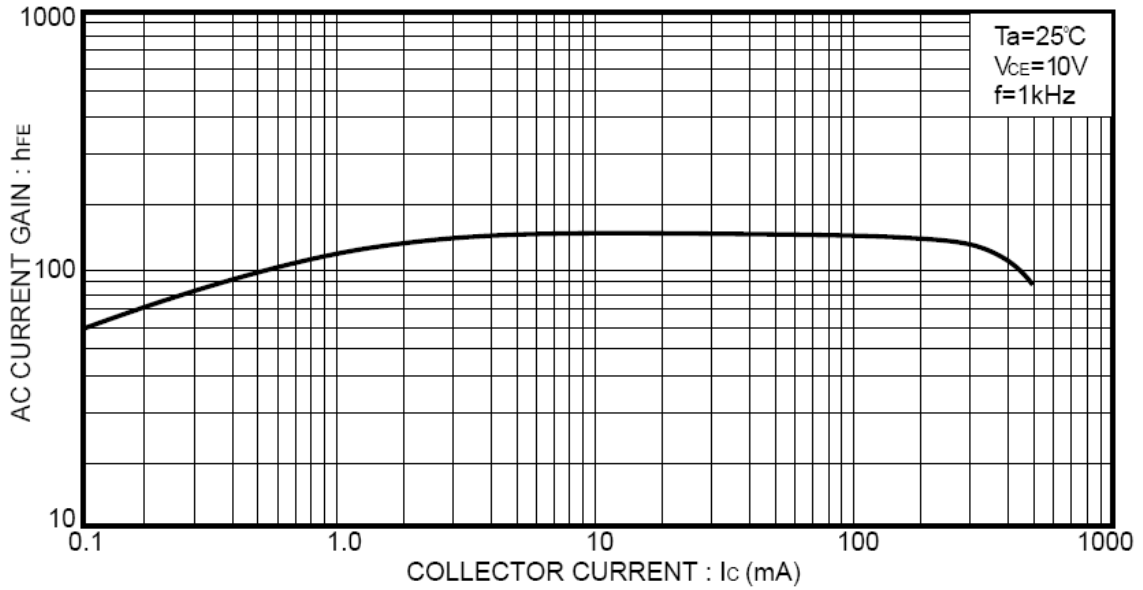


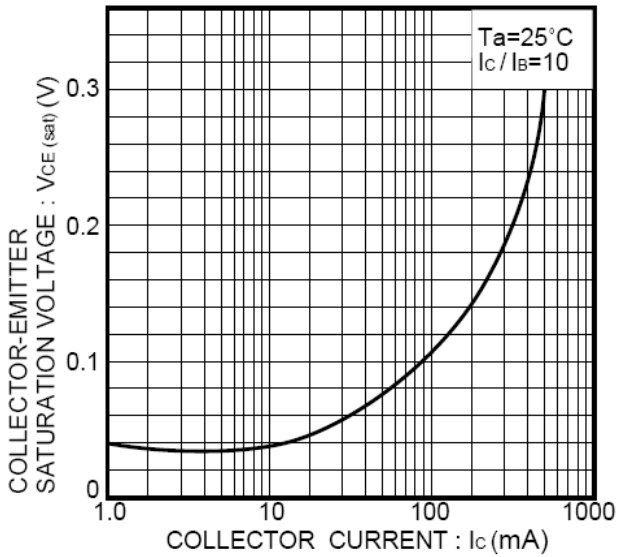
Fig.4 DC Current Gain vs. Collector Current ( II )



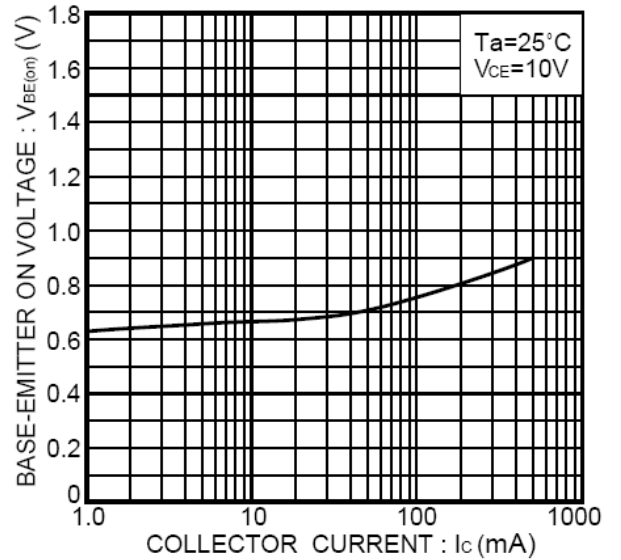
**Fig.5 AC Current Gain vs. Collector Current**



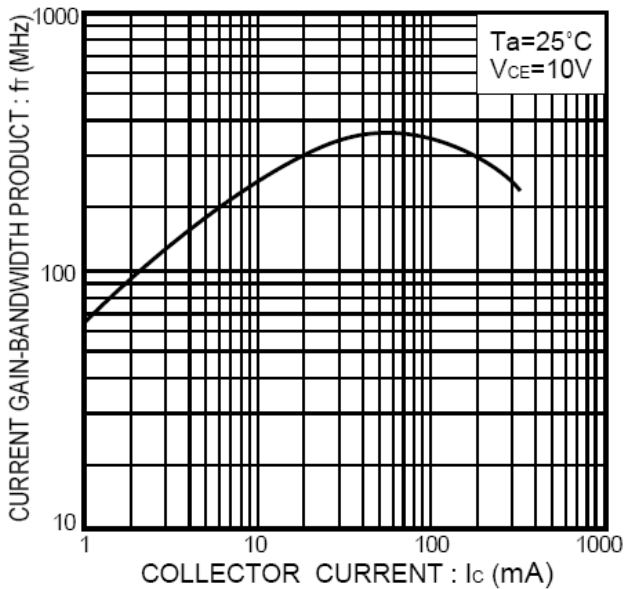
**Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current**



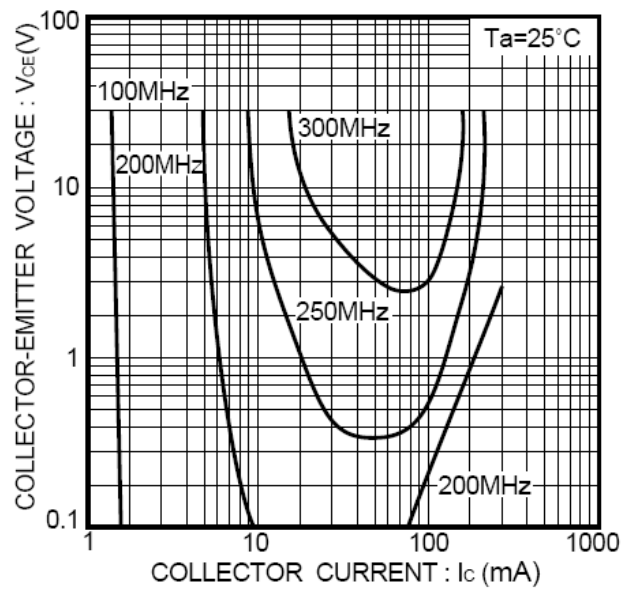
**Fig.7 Grounded Emitter Propagation Characteristics**



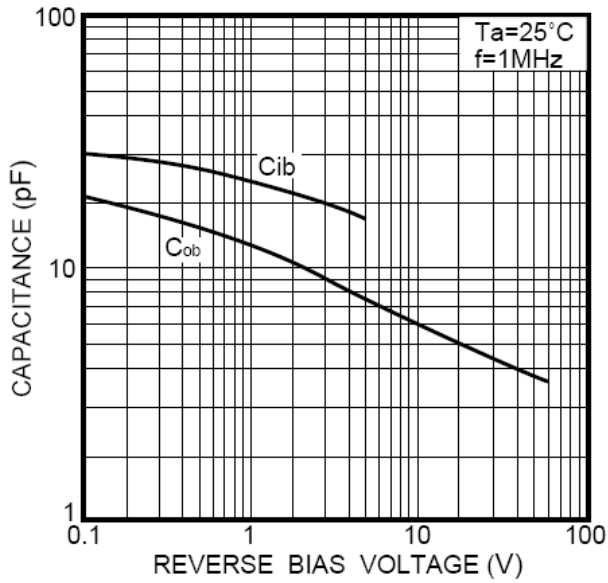
**Fig.8 Gain Bandwidth Product vs. Collector Current**



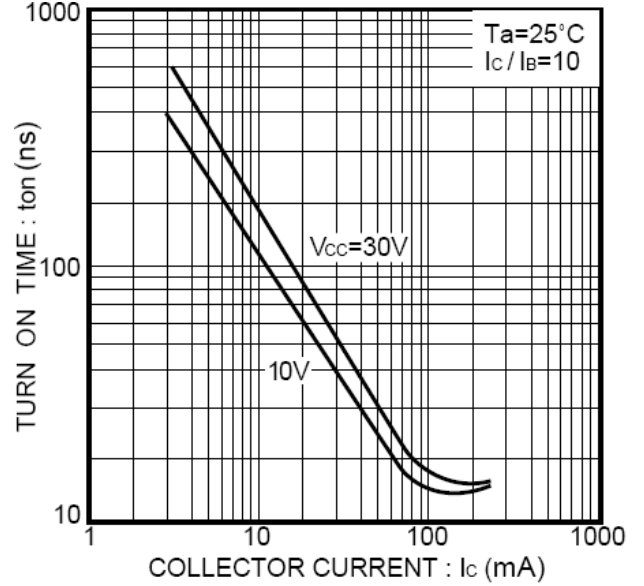
**Fig.9 Gain Bandwidth Product**



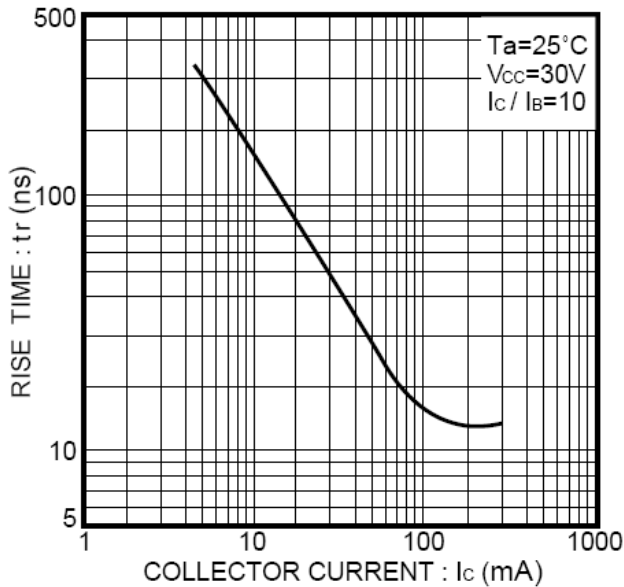
**Fig.10 Input/Output Capacitance vs. Voltage**



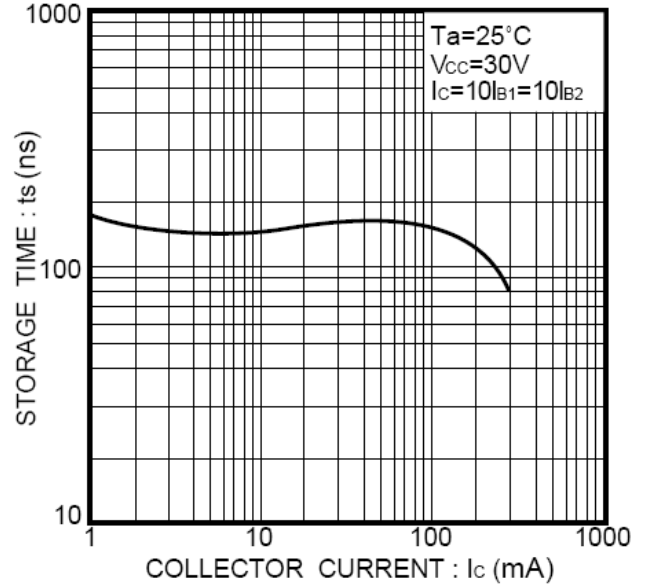
**Fig.11 Turn-on Time vs. Collector Current**



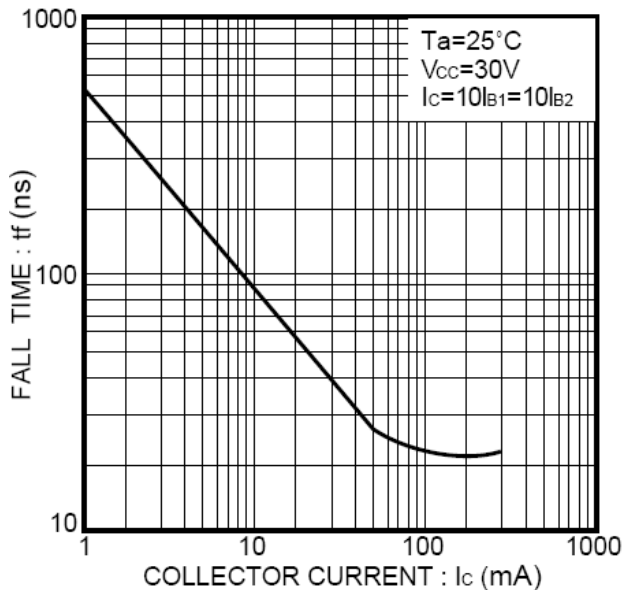
**Fig.12 Rise Time vs. Collector Current**



**Fig.13 Storage Time vs. Collector Current**



**Fig.14 Fall Time vs. Collector Current**



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