

MMBT5550LT1, MMBT5551LT1

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Breakdown Voltage (Note 3) (I _C = 1.0 mAdc, I _B = 0)	MMBT5550 MMBT5551	V _{(BR)CEO}	140 160	- -	Vdc
Collector - Base Breakdown Voltage (I _C = 100 µAdc, I _E = 0)	MMBT5550 MMBT5551	V _{(BR)CBO}	160 180	- -	Vdc
Emitter - Base Breakdown Voltage (I _E = 10 µAdc, I _C = 0)		V _{(BR)EBO}	6.0	-	Vdc
Collector Cutoff Current (V _{CB} = 100 Vdc, I _E = 0) (V _{CB} = 120 Vdc, I _E = 0) (V _{CB} = 100 Vdc, I _E = 0, T _A = 100°C) (V _{CB} = 120 Vdc, I _E = 0, T _A = 100°C)	MMBT5550 MMBT5551 MMBT5550 MMBT5551	I _{CBO}	- - - -	100 50 100 50	nAdc µAdc
Emitter Cutoff Current (V _{EB} = 4.0 Vdc, I _C = 0)		I _{EBO}	-	50	nAdc
ON CHARACTERISTICS					
DC Current Gain (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc) (I _C = 10 mAdc, V _{CE} = 5.0 Vdc) (I _C = 50 mAdc, V _{CE} = 5.0 Vdc)	MMBT5550 MMBT5551 MMBT5550 MMBT5551 MMBT5550 MMBT5551	h _{FE}	60 80 60 80 20 30	- - 250 250 - -	-
Collector - Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc) (I _C = 50 mAdc, I _B = 5.0 mAdc)	Both Types MMBT5550 MMBT5551	V _{CE(sat)}	- - -	0.15 0.25 0.20	Vdc
Base - Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc) (I _C = 50 mAdc, I _B = 5.0 mAdc)	Both Types MMBT5550 MMBT5551	V _{BE(sat)}	- - -	1.0 1.2 1.0	Vdc
Collector Emitter Cut-off (V _{CB} = 10 V) (V _{CB} = 75 V)	Both Types	I _{CES}	- -	50 100	nA

3. Pulse Test: Pulse Width = 300 µs, Duty Cycle = 2.0%.

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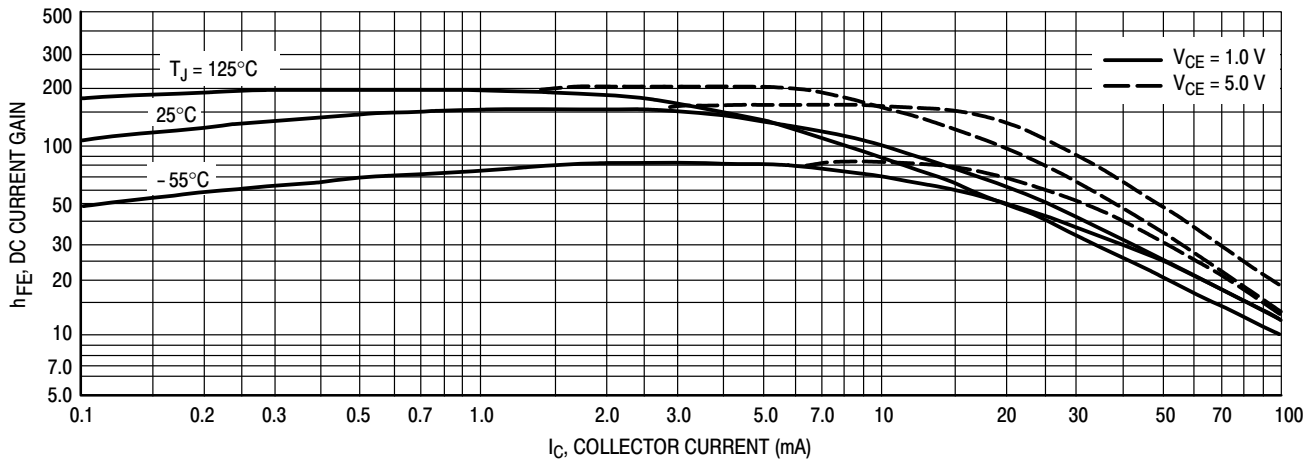


Figure 1. DC Current Gain

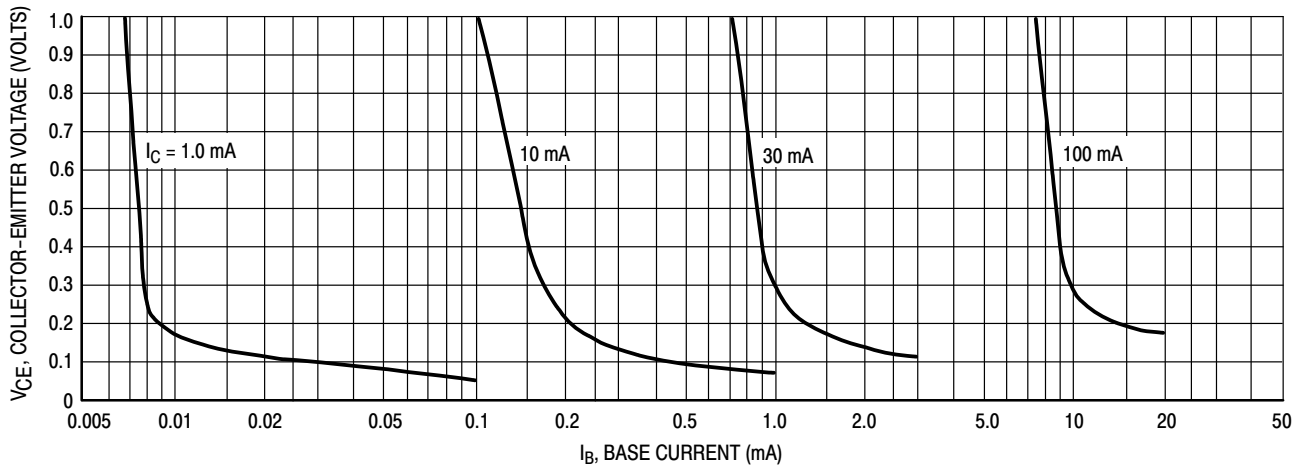


Figure 2. Collector Saturation Region

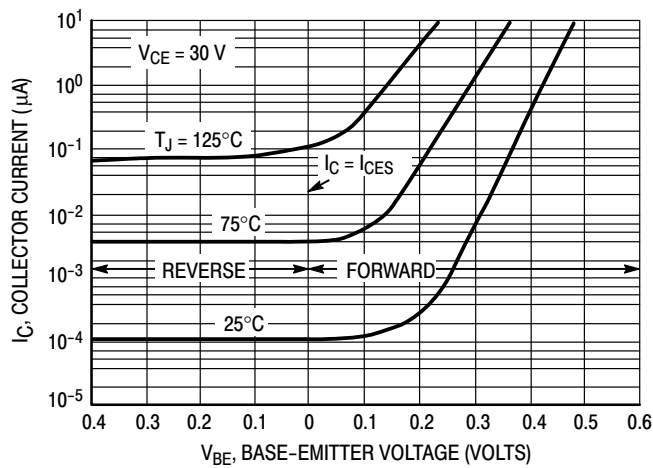


Figure 3. Collector Cut-Off Region

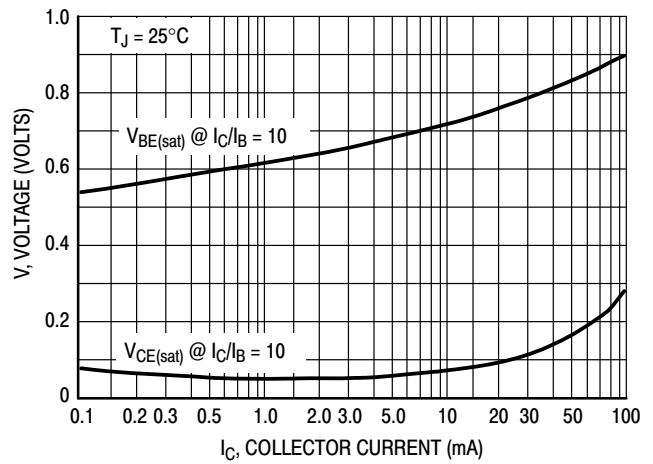


Figure 4. "On" Voltages

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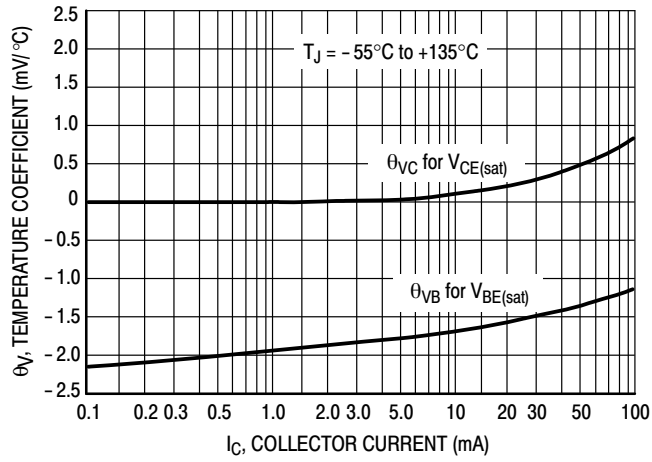
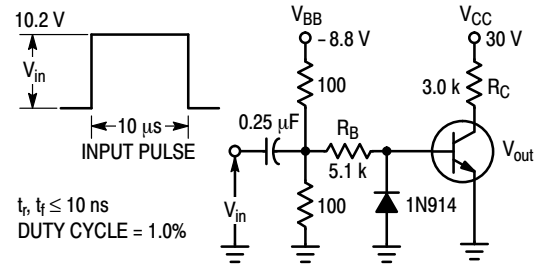


Figure 5. Temperature Coefficients



Values Shown are for I_C @ 10 mA

Figure 6. Switching Time Test Circuit

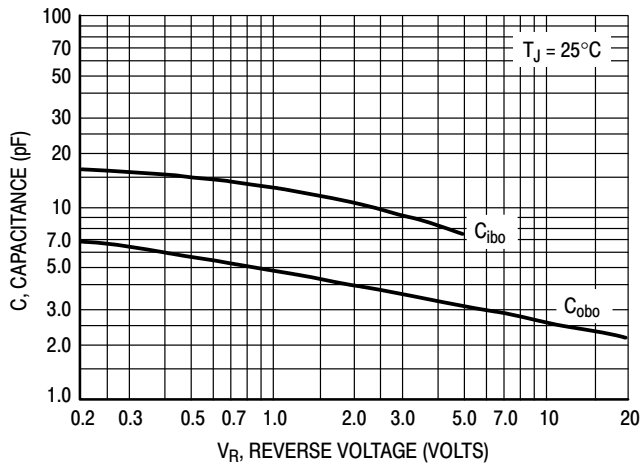


Figure 7. Capacitances

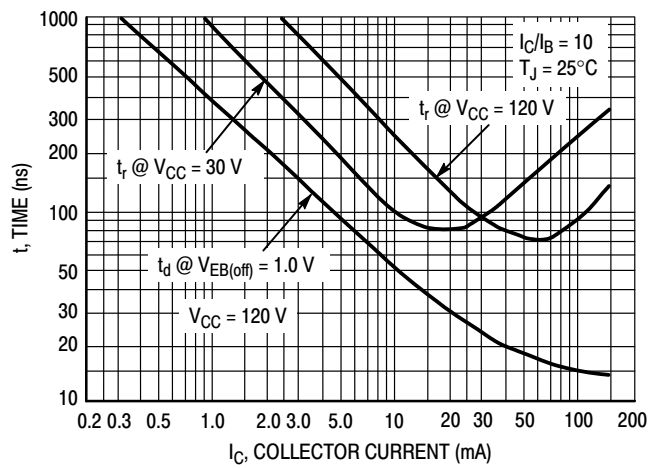


Figure 8. Turn-On Time

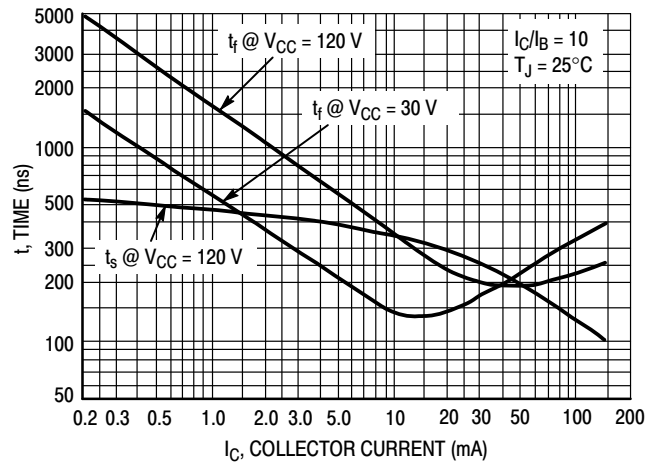
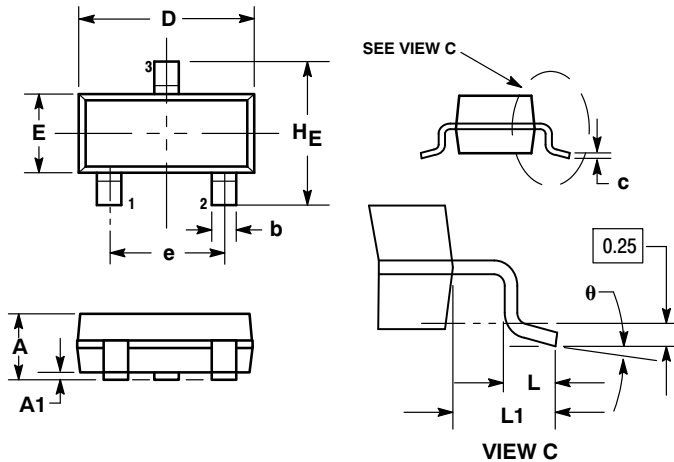


Figure 9. Turn-Off Time

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PACKAGE DIMENSIONS

SOT-23 (TO-236)
CASE 318-08
ISSUE AN



NOTES:

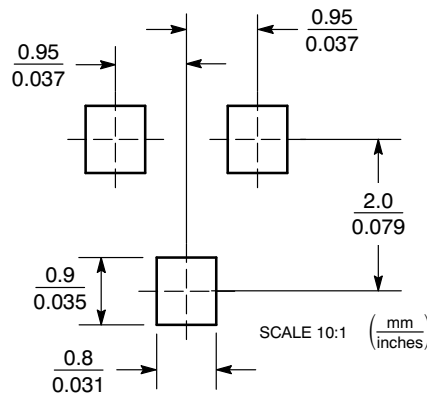
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104


STYLE 6:

1. BASE
2. EMITTER
3. COLLECTOR

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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