Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	1.0	A

Thermal Characteristics @ T_A = 25°C unless otherwise specified

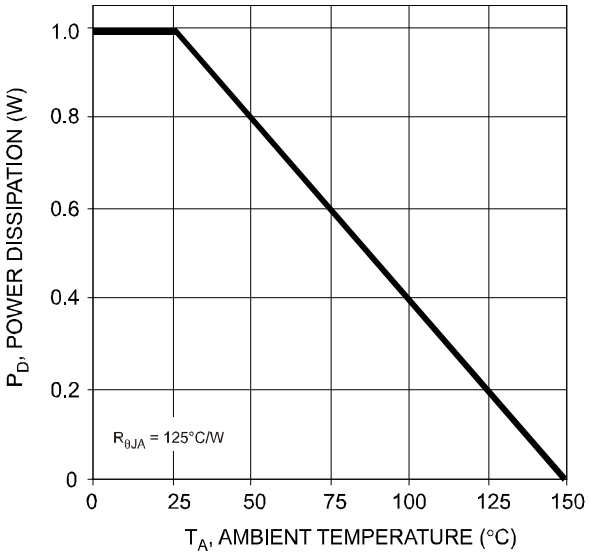
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	1	W
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	125	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

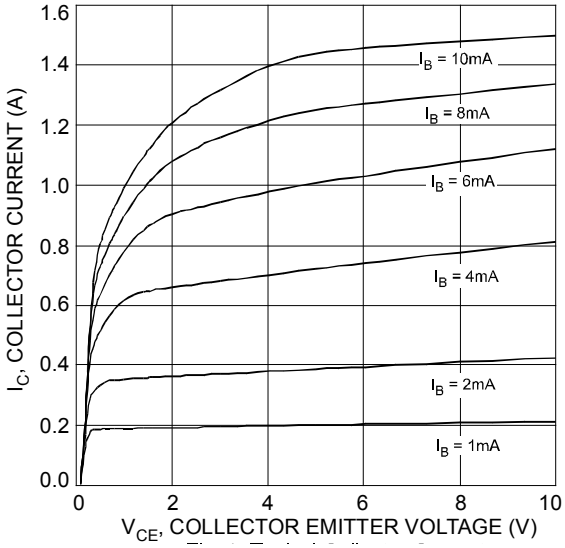
Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 6)							
Collector-Emitter Breakdown Voltage		BV_{CES}	25	—	—	V	I_C = 100μA, I_E = 0
Collector-Emitter Breakdown Voltage		BV_{CEO}	20	—	—	V	I_C = 1.0mA, I_B = 0
Collector-Base Breakdown Voltage		BV_{CBO}	25	—	—	V	I_C = 10μA, I_E = 0
Emitter-Base Breakdown Voltage		BV_{EBO}	5.0	—	—	V	I_E = 10μA, I_C = 0
Collector-Base Cut-Off Current		I_{CBO}	—	—	100	nA	V_{CB} = 25V, I_E = 0
Emitter-Base Cut-Off Current		I_{EBO}	—	—	10	μA	V_{EB} = 5.0V, I_C = 0
ON CHARACTERISTICS (Note 6)							
DC Current Gain	DCP68, DCP68-25	h_{FE}	50 60	— —	— —	—	V_{CE} = 10V, I_C = 5.0mA V_{CE} = 1.0V, I_C = 1.0A
	DCP68		85	—	375		V_{CE} = 1.0V, I_C = 500mA
	DCP68-25		160	—	375		V_{CE} = 1.0V, I_C = 500mA
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	—	—	0.5	V	I_C = 1.0A, I_B = 100mA
Base-Emitter Turn-On Voltage		$V_{BE\ (on)}$	—	—	1.0	V	V_{CE} = 1.0V, I_C = 1.0A
SMALL SIGNAL CHARACTERISTICS							
Transition frequency		f_T	—	330	—	MHz	I_C = 100mA, V_{CE} = 5.0V f = 100MHz

Notes: 5. For a device mounted on minimum recommended pad layout 1oz weight copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
6. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

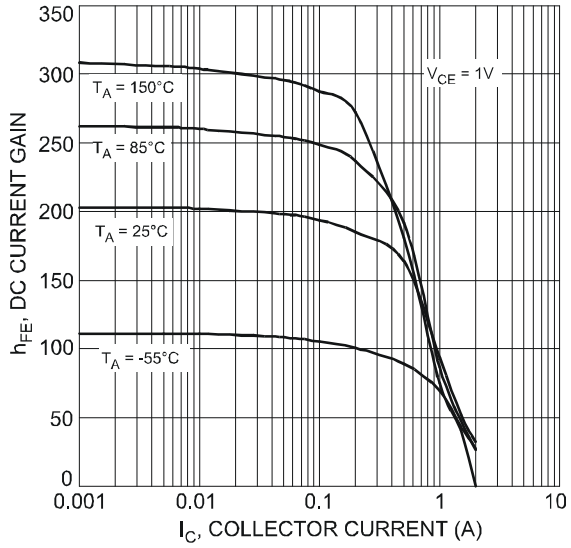
Typical Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.)



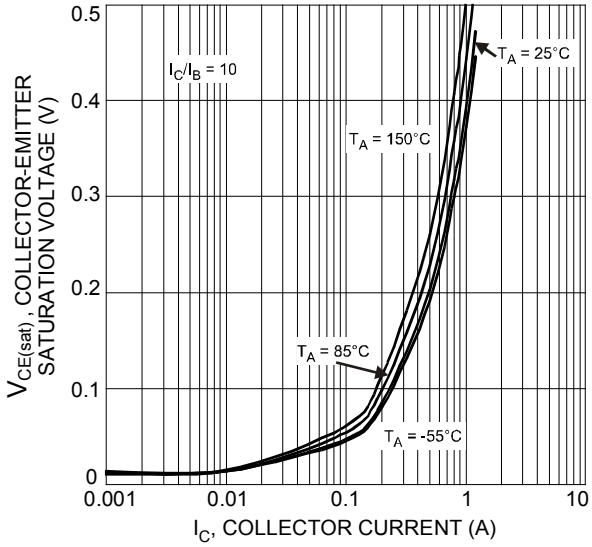
P_D v T_A



I_C v V_{CE}

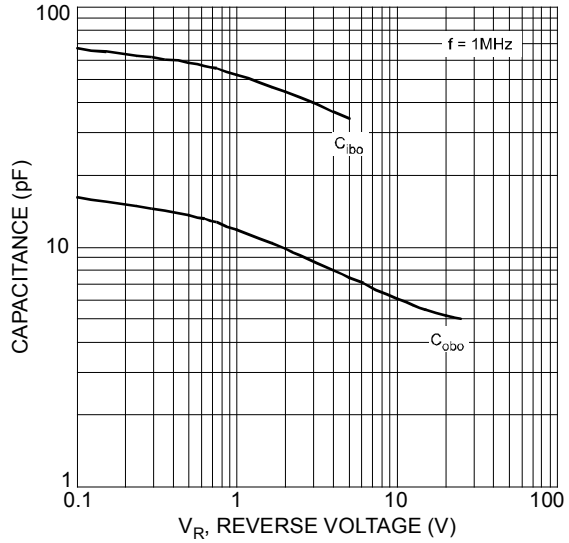


h_{FE} v I_C

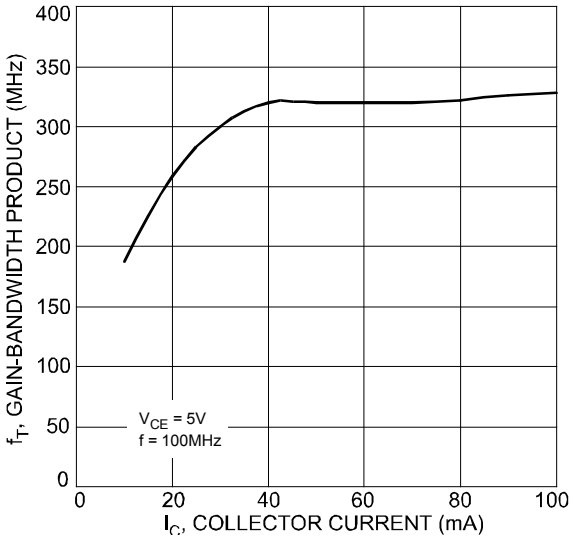


$V_{CE(sat)}$ v I_C

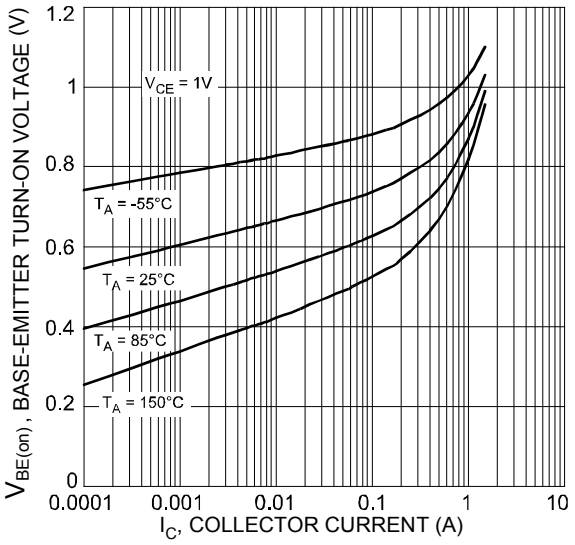
Typical Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.)



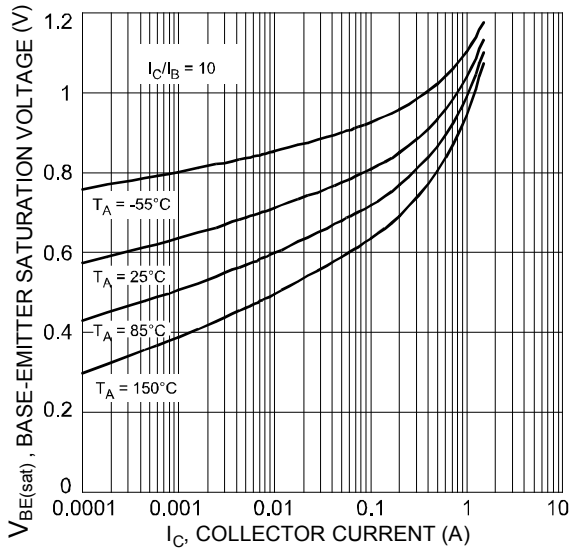
C v V_R



f_T v I_C



$V_{BE(on)}$ v I_C

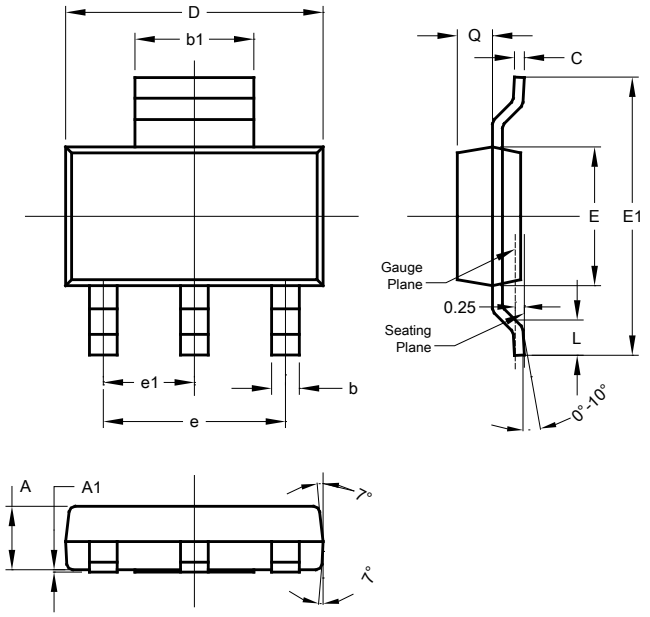


$V_{BE(sat)}$ v I_C

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT223

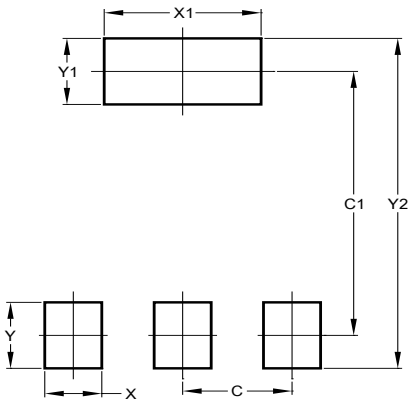


SOT223			
Dim	**Min**	**Max**	**Typ**
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b	0.60	0.80	0.70
b1	2.90	3.10	3.00
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	—	—	4.60
e1	—	—	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT223



Dimensions	Value (in mm)
C	2.30
C1	6.40
X	1.20
X1	3.30
Y	1.60
Y1	1.60
Y2	8.00

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