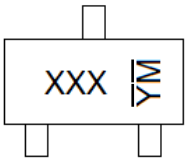
Marking Information

SOT323



XXX = Product Type Marking Code (See Ordering Information)
YM = Date Code Marking
Y or $\overline{Y}$ = Year (ex: H = 2020)
M or $\overline{M}$ = Month (ex: 9 = September)

Date Code Key

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	H	I	J	K	L	M	N	O	P	R	S	T

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Absolute Maximum Ratings (@ T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Collector-Base Voltage	BC856	V_{CBO}	-80	V
	BC857		-50	
	BC858		-30	
Collector-Emitter Voltage	BC856	V_{CEO}	-65	V
	BC857		-45	
	BC858		-30	
Emitter-Base Voltage		V_{EBO}	-5.0	V
Continuous Collector Current		I_C	-100	mA
Peak Pulse Collector Current (single pulse)		I_{CM}	-200	mA
Peak Pulse Emitter Current (single pulse)		I_{EM}	-200	mA

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

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	200	mW
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\Theta JA}$	625	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

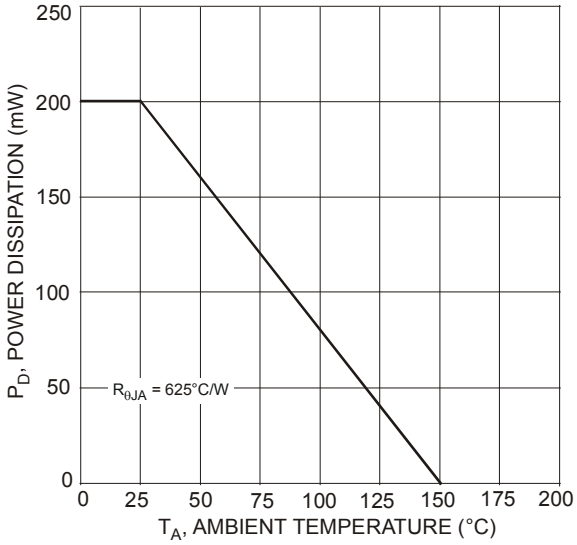
Note: 5. For a device mounted on minimum recommended pad layout 1oz copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.

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

Characteristic			Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BC856		BV_{CBO}	-80	—	—	V	I_C = -100μA
	BC857			-50				
	BC858			-30				
Collector-Emitter Breakdown Voltage (Note 6)	BC856		BV_{CEO}	-65	—	—	V	I_C = -10mA
	BC857			-45				
	BC858			-30				
Emitter-Base Breakdown Voltage			BV_{EBO}	-5	—	—	V	I_E = -100μA
DC Current Gain (Note 6)	Current Gain Group	A	h_{FE}	125	180	250	—	V_{CE} = -5.0V, I_C = -2.0mA
		B		220	290	475		
		C		420	520	800		
Collector Cutoff Current			I_{CBO}	—	—	-15	nA	V_{CB} = -30V
						-4	μA	V_{CB} = -30V, T_A = +150°C
Collector-Emitter Saturation Voltage (Note 6)			$V_{CE(sat)}$	—	-75	-300	mV	I_C = -10mA, I_B = -0.5mA
					-250	-650		I_C = -100mA, I_B = -5.0mA
Base-Emitter Turn-On Voltage (Note 6)			$V_{BE(on)}$	-600	-650	-750	mV	I_C = -2mA, V_{CE} = -5V
				—	—	-820		I_C = -10mA, V_{CE} = -5V
Base-Emitter Saturation Voltage (Note 6)			$V_{BE(sat)}$	—	-700	—	mV	I_C = -10mA, I_B = -0.5mA
					-850	-950		I_C = -100mA, I_B = -5mA
Output Capacitance			C_{obo}	—	3	4.5	pF	V_{CB} = -10V, f = 1.0MHz
Transition Frequency			f_T	100	200	—	MHz	V_{CE} = -5V, I_C = -10mA, f = 100MHz
Noise Figure			NF	—	—	10	dB	V_{CE} = -5V, I_C = -200μA R_S = 2kΩ, f = 1kHz Δf = 200Hz

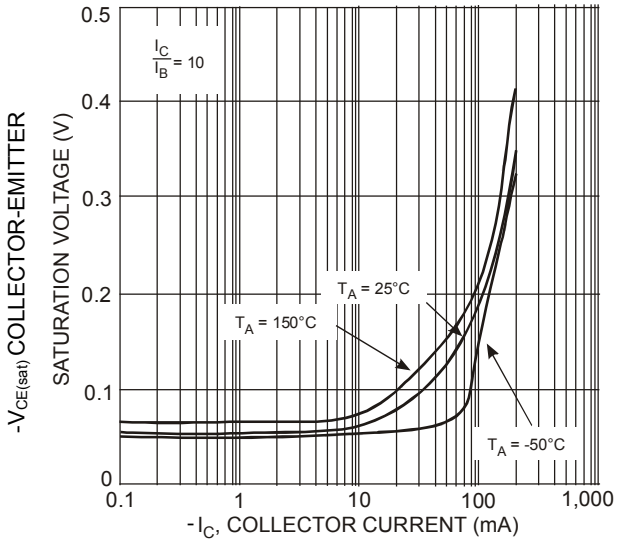
Note: 6. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%

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



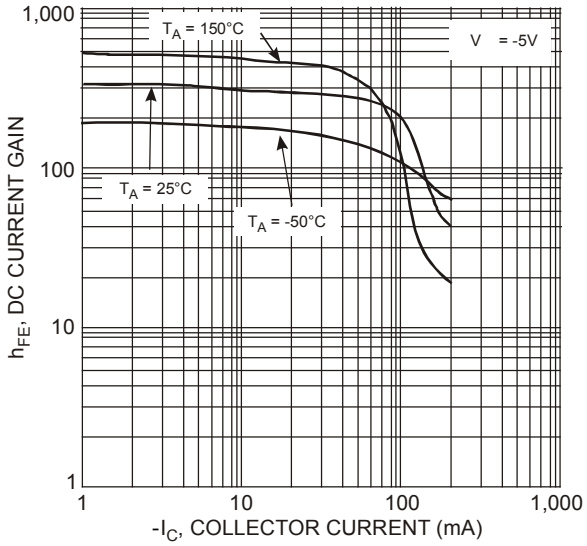
Power Dissipation vs.

P_d v T_A

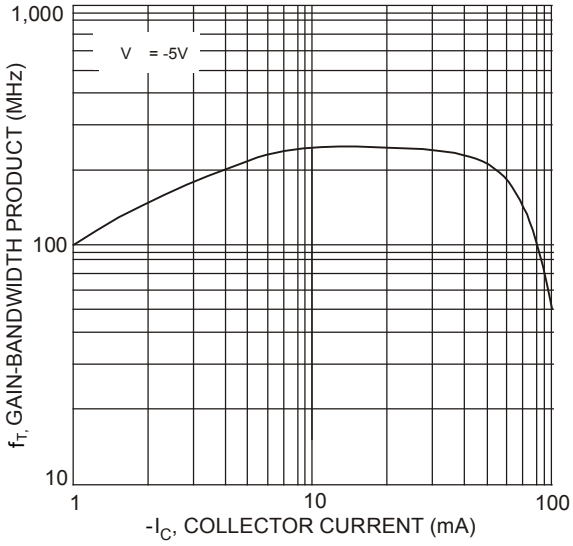


Typical Collector-Emitter Saturation Voltage

$V_{CE(sat)}$ v I_C



h_{FE} v I_C



f_T v I_C

Package Outline Dimensions

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

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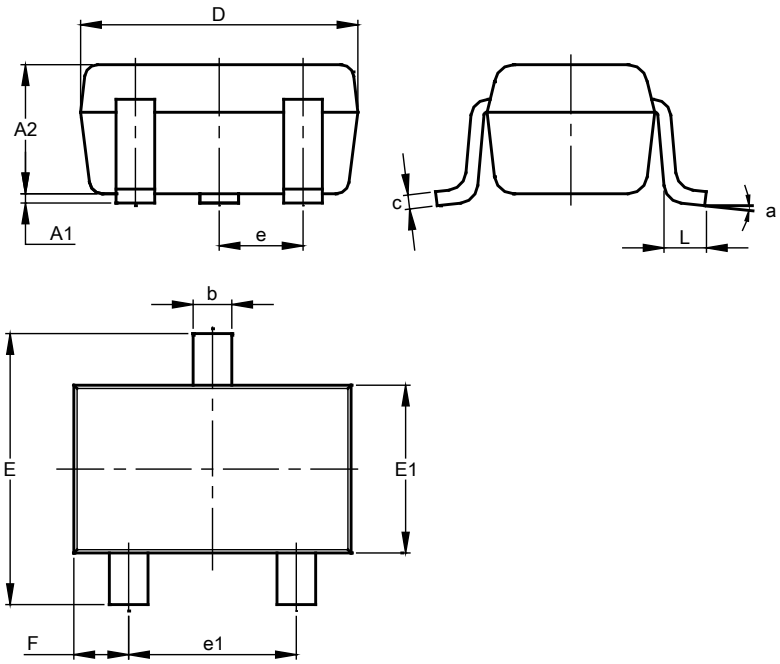

SOT323			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

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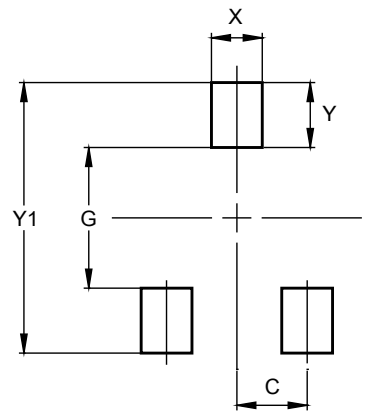

Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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