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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-600	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 Air (Note 6)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Notes: 5. For the device mounted on minimum recommended pad layout FR-4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

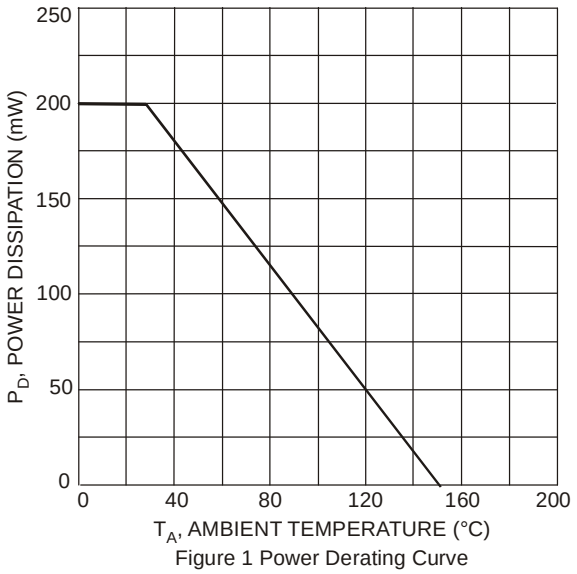


Figure 1 Power Derating Curve

© Diodes Incorporated
Downloaded from Arrow.com.

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	-60	—	—	V	I_C = -10µA, I_B = 0
Collector-Emitter Breakdown Voltage (Note 7)	BV_{CEO}	-60	—	—	V	I_C = -10mA, I_B = 0
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	I_E = -10µA, I_C = 0
Collector Cutoff Current	I_{CBO}	— —	— —	-10 -10	nA µA	V_{CB} = -50V, I_E = 0 V_{CB} = -50V, I_E = 0, T_A = +125°C
Collector Cutoff Current	I_{CEX}	—	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V
Base Cutoff Current	I_{BL}	—	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V
ON CHARACTERISTICS (Note 7)						
DC Current Gain	h_{FE}	75 100 100 100 50	— — — — —	— — — 300 —	—	I_C = -100µA ,V_{CE} = -10V I_C = -1.0mA, V_{CE} = -10V I_C = -10mA, V_{CE} = -10V I_C = -150mA, V_{CE} = -10V I_C = -500mA, V_{CE} = -10V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	—	-0.4 -1.6	V	I_C = -150mA, I_B = -15mA I_C = -500mA, I_B = -50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	—	-1.3 -2.6	V	I_C = -150mA, I_B = -15mA I_C = -500mA, I_B = -50mA
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{OBO}	—	—	8.0	pF	V_{CB} = -10V, f = 1.0MHz, I_E = 0
Input Capacitance	C_{IBO}	—	—	30	pF	V_{EB} = -2.0V, f = 1.0MHz, I_C = 0
Current Gain Bandwidth Product	f_T	200	—	—	MHz	V_{CE} = -20V, I_C = -50mA, f = 100MHz
SWITCHING CHARACTERISTICS						
Turn-On Time	t_{off}	—	—	45	ns	V_{CC} = -30V, I_C = -150mA, I_{B1} = -15mA
Delay Time	t_d	—	—	10	ns	
Rise Time	t_r	—	—	40	ns	
Turn-Off Time	t_{off}	—	—	100	ns	V_{CC} = -6V, I_C = -150mA, I_{B1} = -I_{B2} = -15mA
Storage Time	t_s	—	—	80	ns	
Fall Time	t_f	—	—	30	ns	

Note: 7. Short duration pulse test used to minimize self-heating effect.

© Diodes Incorporated
Downloaded from Arrow.com.

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

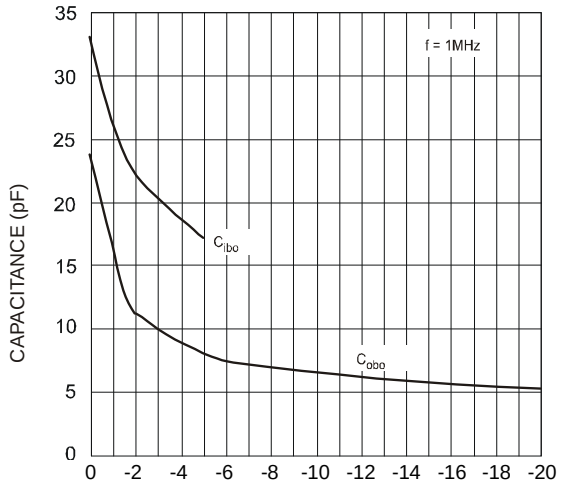


Fig. 2, Typical Capacitance Characteristics

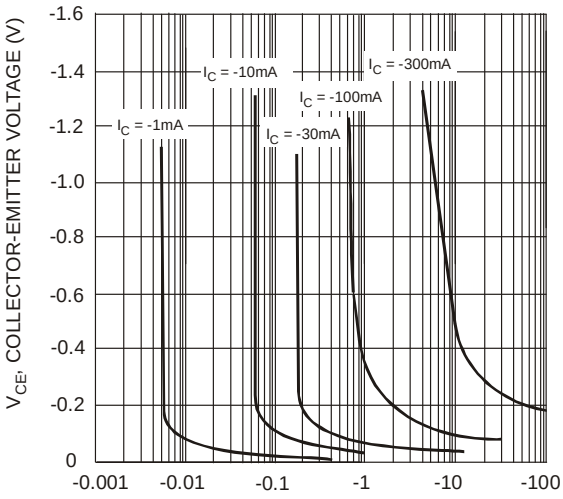


Fig. 3, Typical Collector Saturation Region

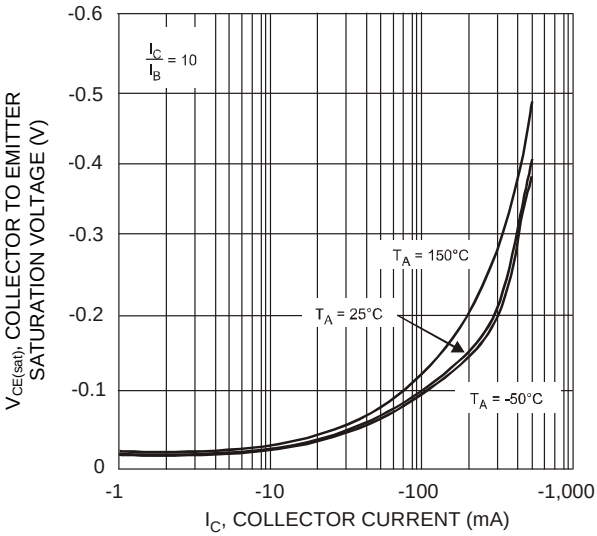


Fig. 4, Collector Emitter Saturation Voltage vs. Collector Current

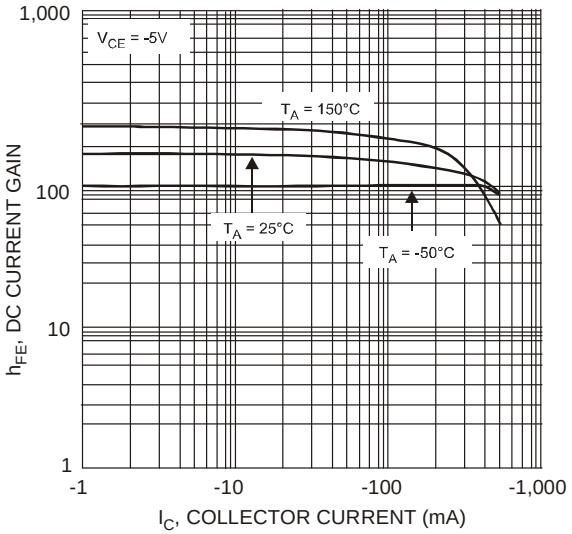


Fig. 5, DC Current Gain vs. Collector Current

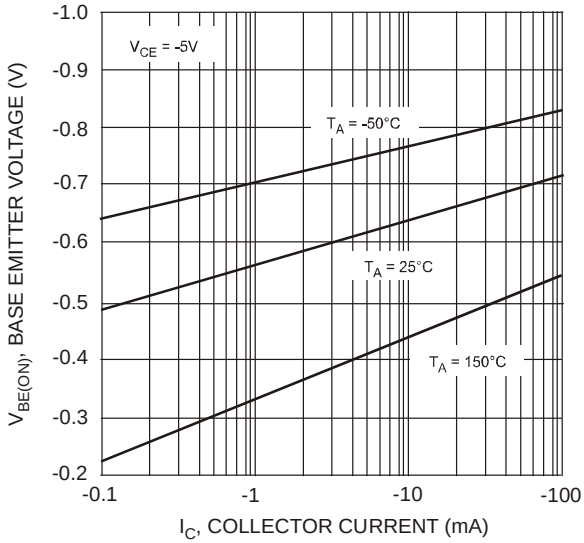


Fig. 6, Base Emitter Voltage vs. Collector Current

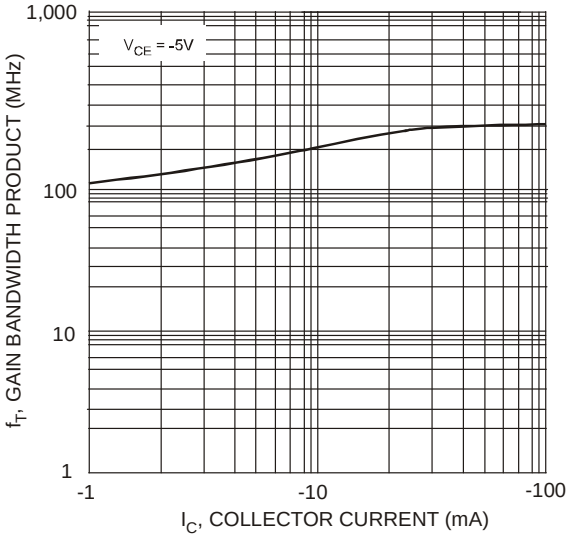


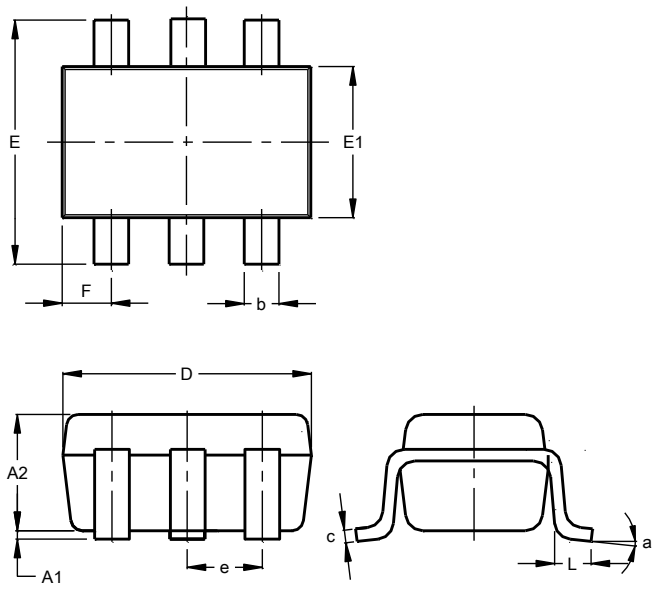
Fig. 7, Gain Bandwidth Product vs. Collector Current

© Diodes Incorporated
Downloaded from Arrow.com.

Package Outline Dimensions

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

SOT363

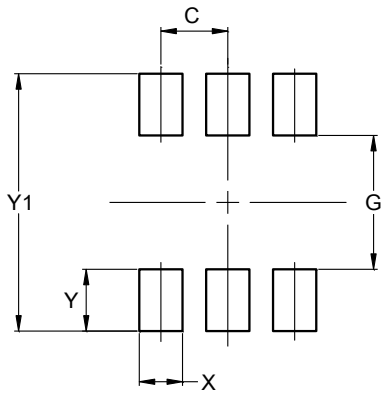


SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

© Diodes Incorporated

Downloaded from Arrow.com.

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or

2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2019, Diodes Incorporated

www.diodes.com

Downloaded from Arrow.com.