

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}	50	V
Emitter-Base Voltage	V _{EBO}	7	V
Collector Current—Continuous (Note 5)	I _C	150	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5) T _A = 25°C	P _D	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	833	°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	4000	V	3A
Electrostatic Discharge—Machine Model	ESD MM	400	V	C

- Notes:
5. For a device mounted with the collector lead, on a minimum recommended pad layout of 1oz copper on a single-sided 1.6mm FR4 PCB. Device is measured under still air conditions whilst operating in a steady-state.
 6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

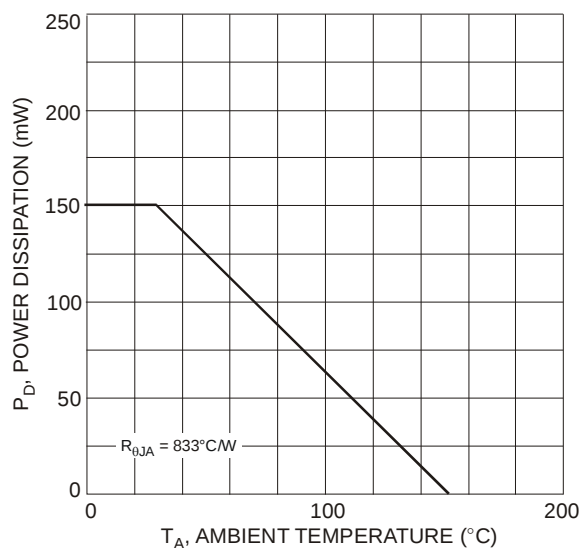
Thermal Characteristics and Derating Information


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 1)

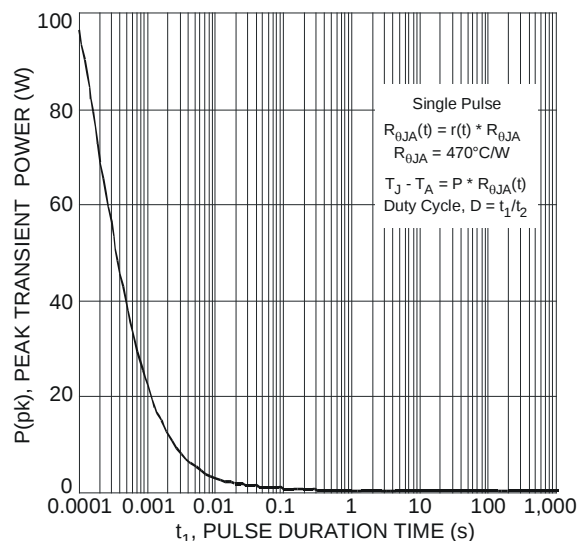


Fig. 2 Single Pulse Maximum Power Dissipation

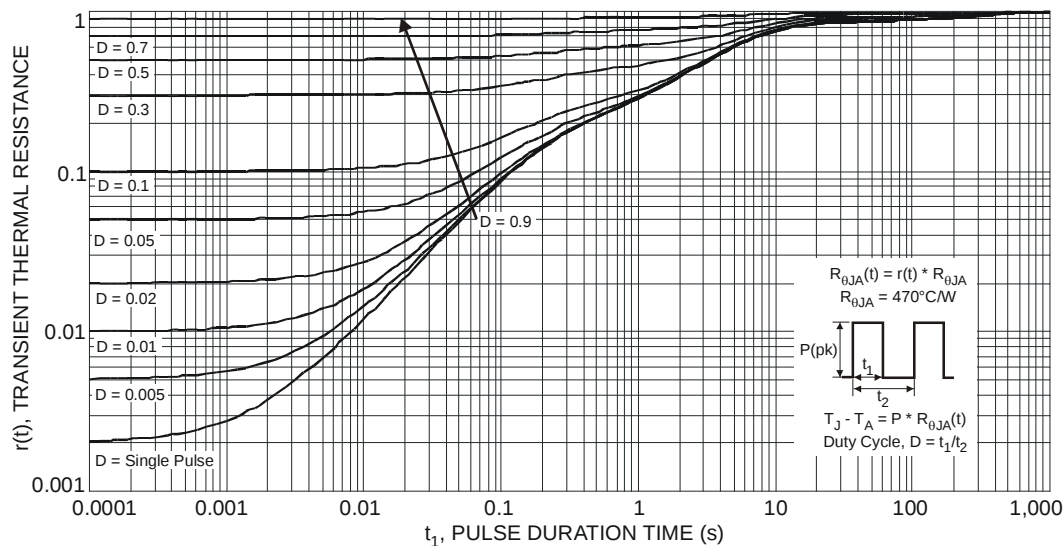
Thermal Characteristics and Derating Information (continued)


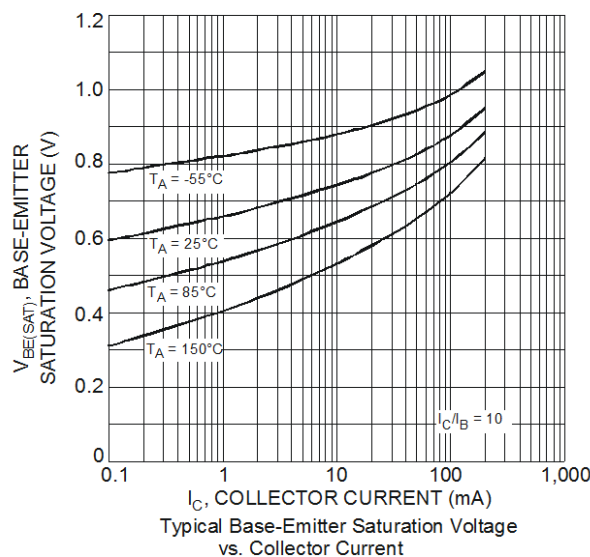
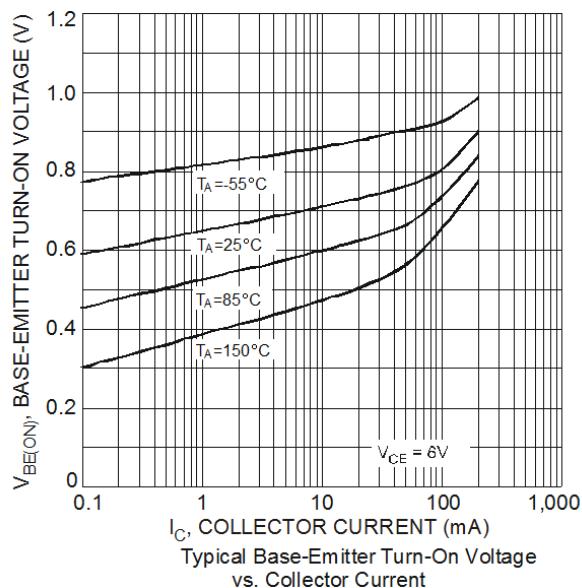
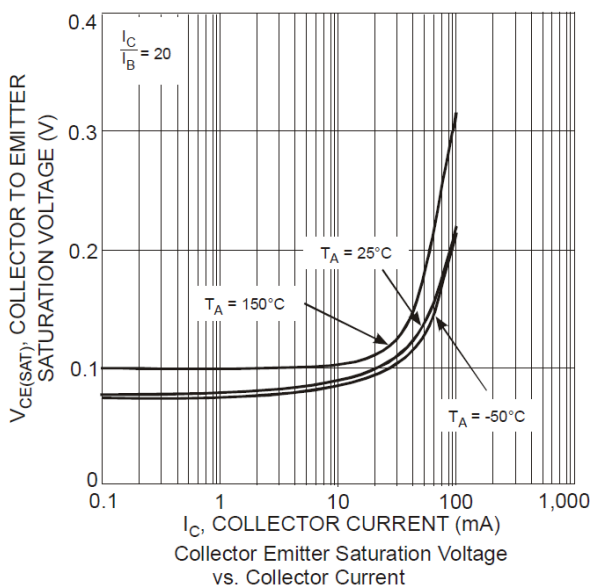
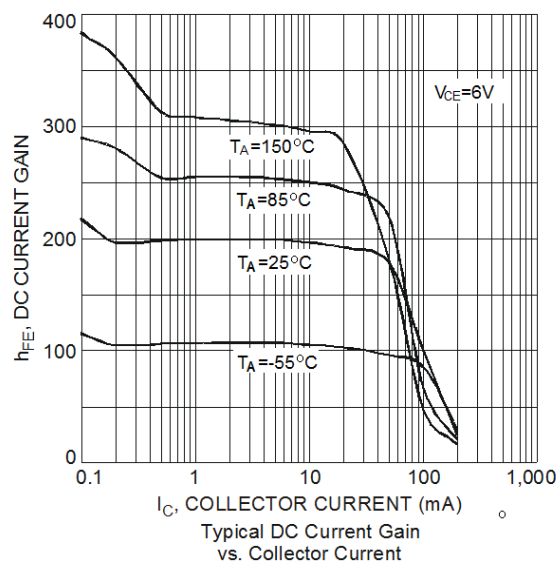
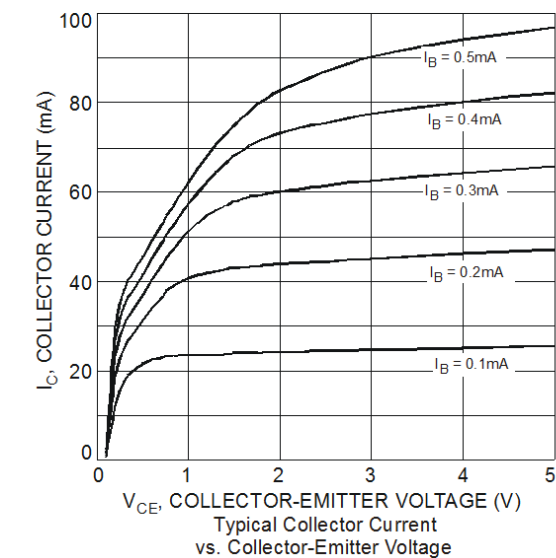
Fig. 3 Transient Thermal Response

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ.	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	—	—	V	$I_C = 50\mu\text{A}$, $I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	—	—	V	$I_C = 1\text{mA}$, $I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50\mu\text{A}$, $I_C = 0$
Collector Cutoff Current	I_{CBO}	—	—	100	nA	$V_{CB} = 60\text{V}$
Emitter Cutoff Current	I_{EBO}	—	—	100	nA	$V_{EB} = 6\text{V}$
ON CHARACTERISTICS (Note 7)						
DC Current Gain	2DC4617Q 2DC4617R 2DC4617S	h_{FE}	120 180 270	— — —	270 390 560	$V_{CE} = 6\text{V}$, $I_C = 1\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	—	0.4	V	$I_C = 50\text{mA}$, $I_B = 5\text{mA}$
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}	—	2	3.5	pF	$V_{CB} = 12\text{V}$, $f = 1\text{MHz}$, $I_E = 0$
Current Gain-Bandwidth Product	f_T	—	140	—	MHz	$V_{CE} = 12\text{V}$, $I_C = 2\text{mA}$, $f = 1\text{MHz}$
Current Gain-Bandwidth Product	f_T	—	180	—	MHz	$V_{CE} = 12\text{V}$, $I_C = 0\text{mA}$, $f = 1\text{MHz}$
Current Gain-Bandwidth Product	f_T	—	180	—	MHz	$V_{CE} = 12\text{V}$, $I_C = 2\text{mA}$, $f = 100\text{MHz}$

 Notes: 7. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

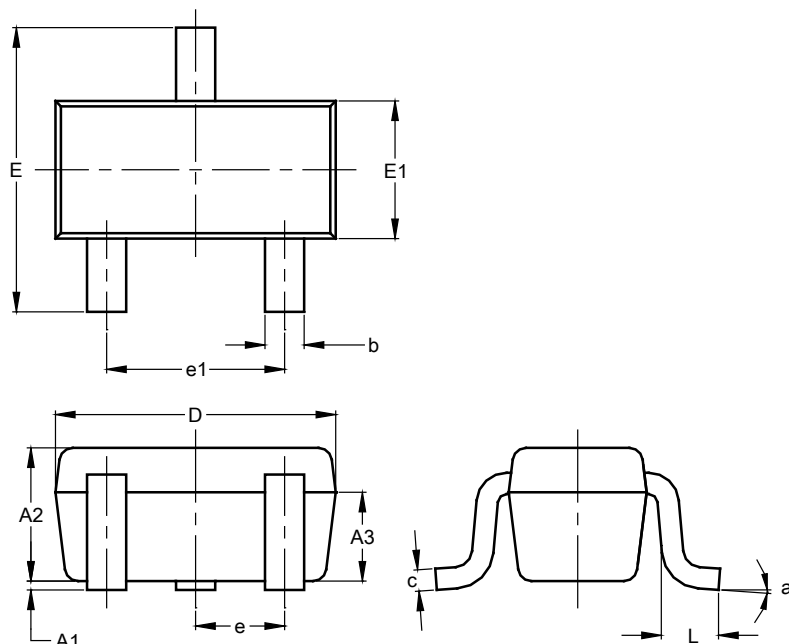
Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

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

SOT523

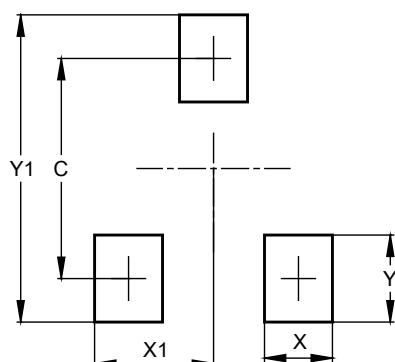


SOT523			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80

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