

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.

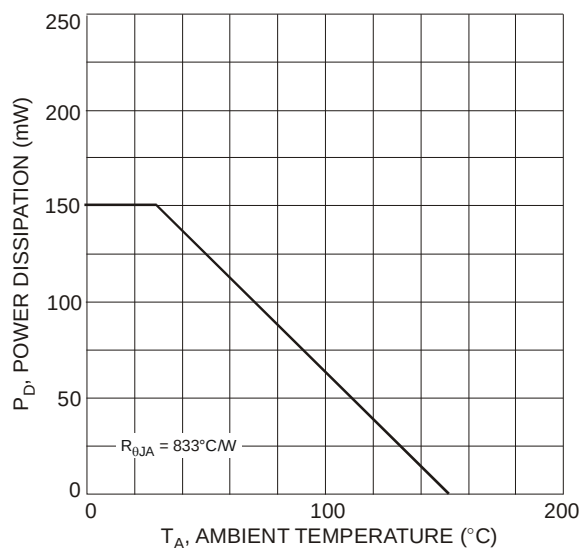
Thermal Characteristics and Derating Information


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

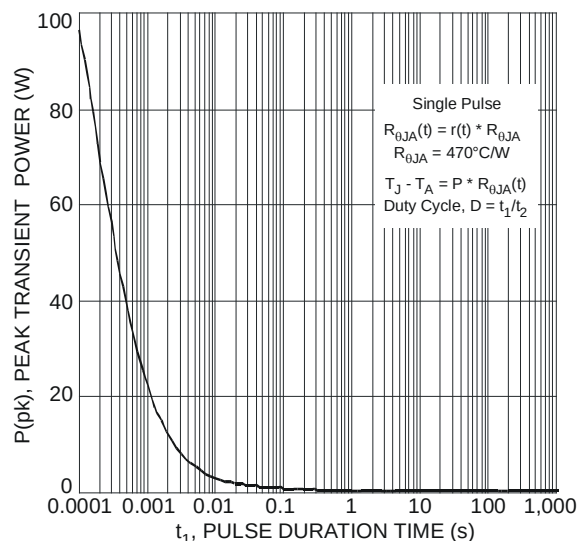


Fig. 2 Single Pulse Maximum Power Dissipation

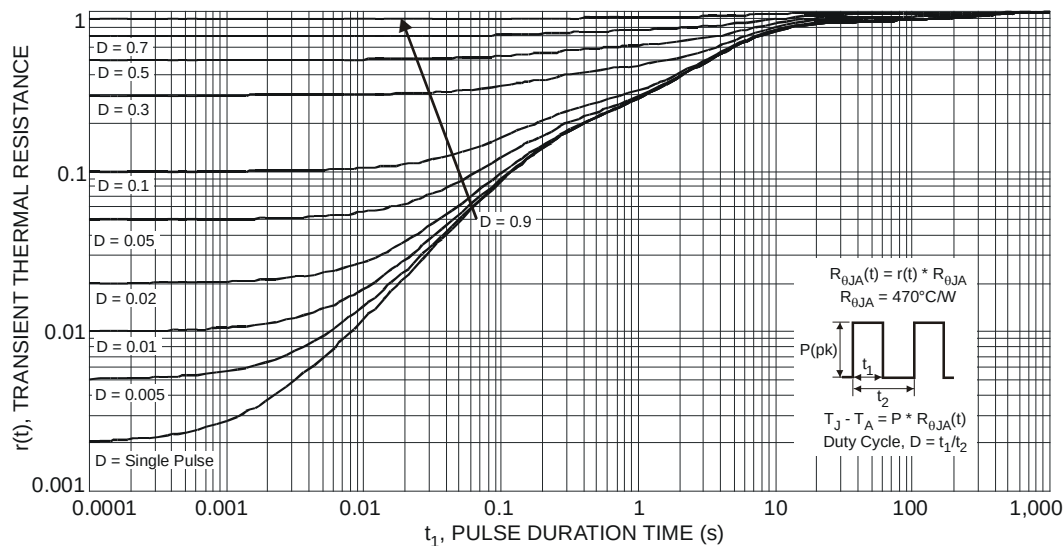
Thermal Characteristics and Derating Information (continued)


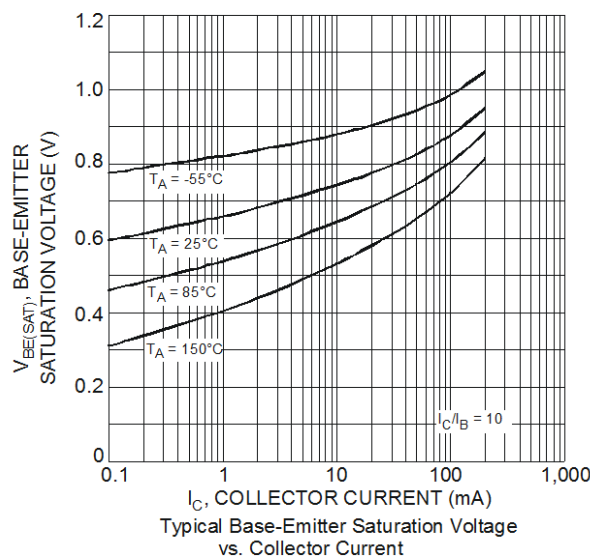
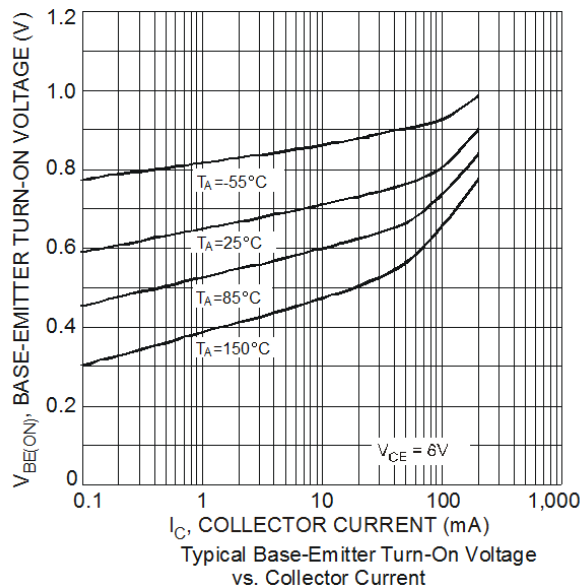
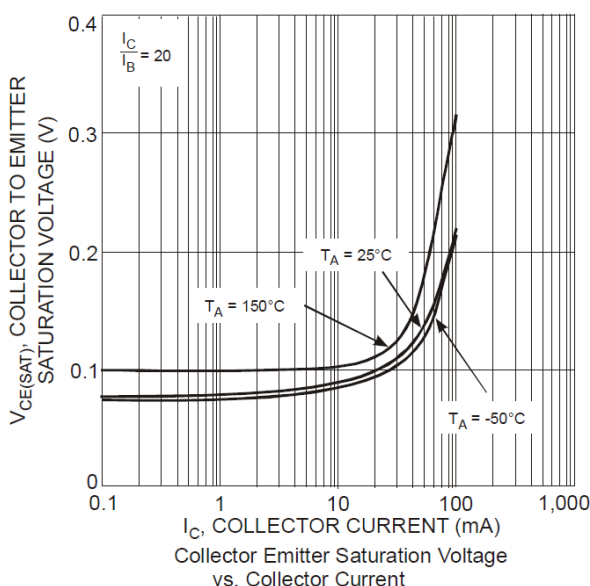
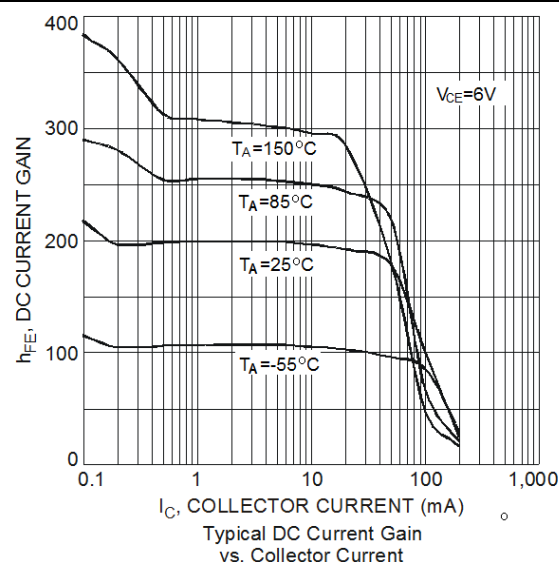
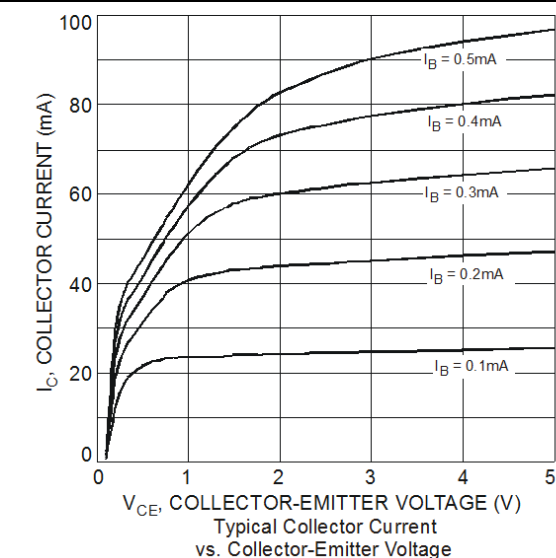
Fig. 3 Transient Thermal Response

Electrical Characteristics @T_A = 25°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 = 50μA, I _E = 0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	50	—	—	V	I _C = 1mA, I _B = 0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	7	—	—	V	I _E = 50μA, I _C = 0
Collector Cutoff Current	I _{CBO}	—	—	100	nA	V _{CB} = 60V
Emitter Cutoff Current	I _{EBO}	—	—	100	nA	V _{EB} = 6V
ON CHARACTERISTICS (Note 7)						
DC Current Gain	2DC4617Q 2DC4617R 2DC4617S h _{FE}	120 180 270	— — —	270 390 560	—	V _{CE} = 6V, I _C = 1mA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	—	0.4	V	I _C = 50mA, I _B = 5mA
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C _{obo}	—	2	3.5	pF	V _{CB} = 12V, f = 1MHz, I _E = 0
Current Gain-Bandwidth Product	f _T	—	140	—	MHz	V _{CE} = 12V, I _C = 2mA, f = 1MHz
Current Gain-Bandwidth Product	f _T	—	180	—	MHz	V _{CE} = 12V, I _C = 0mA, f = 1MHz
Current Gain-Bandwidth Product	f _T	—	180	—	MHz	V _{CE} = 12V, I _C = 2mA, f = 100MHz

Notes: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

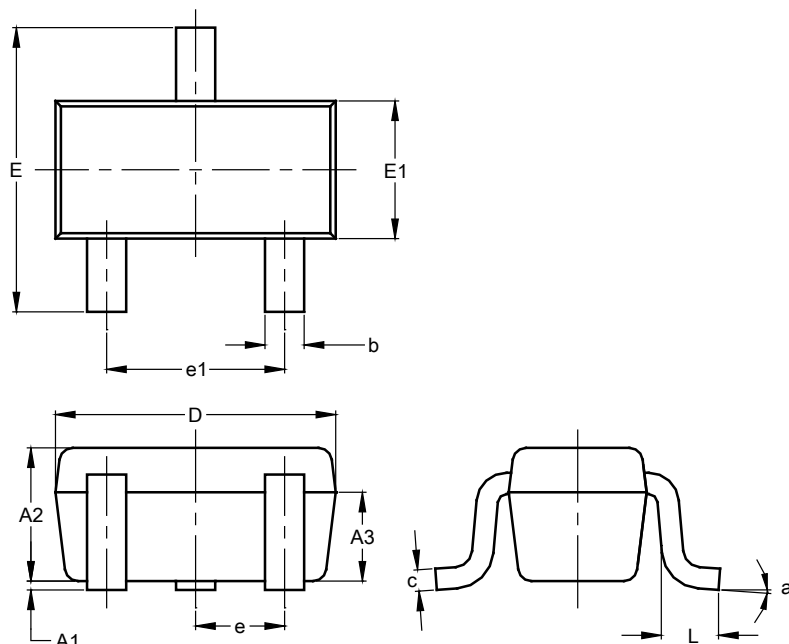
Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

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

SOT523

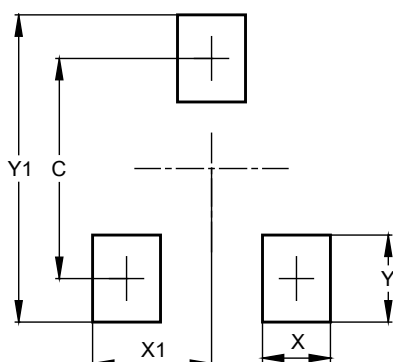


SOT523			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

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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