

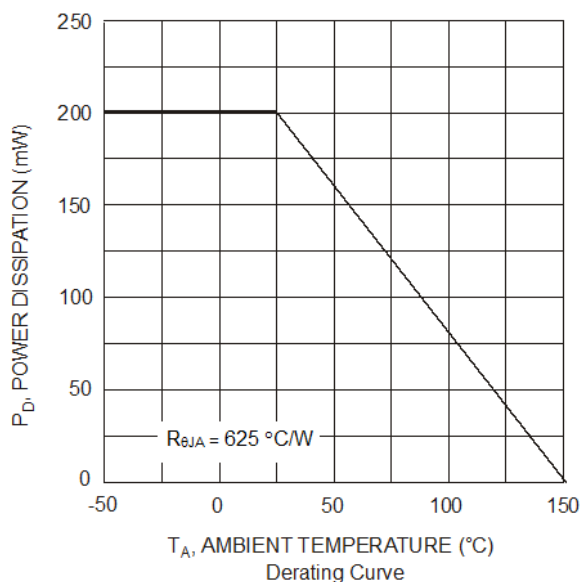
Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Supply Voltage, (3) to (2)		V _{CC}	50	V
Input Voltage, (1) to (2)	DDTD122TU DDTD142TU	V _{IN}	-5 to +6 -5 to +6	V
Input Voltage, (2) to (1)	DDTD122TU DDTD142TU	V _{EBO(MAX)}	5	V
Output Current	All	I _C	500	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 5)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Note: 5. Mounted on FR4 PC Board with minimum recommended pad layout.

Power Derating Curve


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

R1 & R2 Types

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTD122LU DDTD142JU	V _{I(off)}	0.3 0.3	—	—	V	V _{CC} = 5V, I _O = 100μA
	DDTD122LU DDTD142JU	V _{I(on)}	—	—	2.0 2.0	V	V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA
Output Voltage		V _{O(on)}	—	—	0.3	V	I _O /I _I = 50mA/2.5mA
Input Current	DDTD122LU DDTD142JU	I _I	—	—	28 13	mA	V _I = 5V
Output Current		I _{O(off)}	—	—	0.5	μA	V _{CC} = 50V, V _I = 0V
DC Current Gain	DDTD122LU DDTD142JU	G _I	56 56	—	—	—	V _O = 5V, I _O = 50mA
Gain-Bandwidth Product (Note 6)		f _T	—	200	—	MHz	V _{CE} = 10V, I _E = 5mA, f = 100MHz

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

R1-Only Types

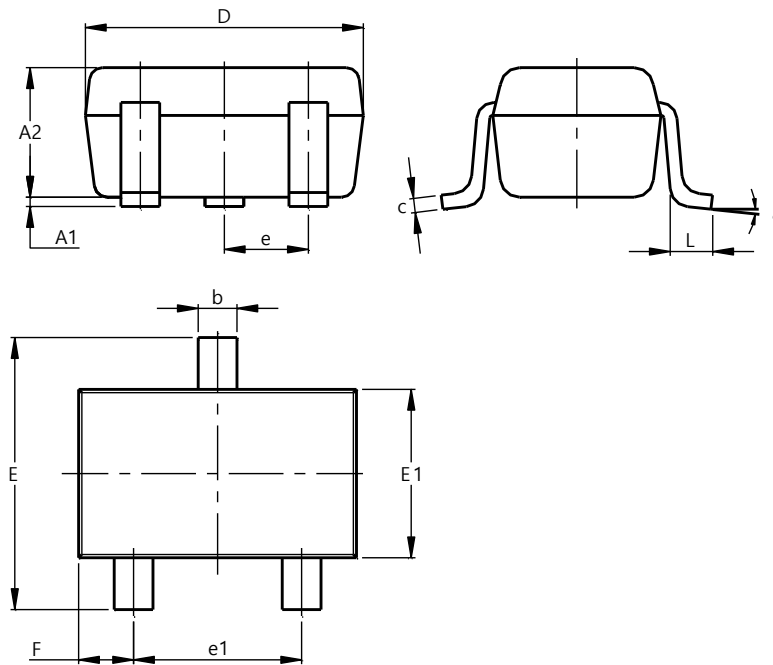
Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV _{CBO}	50	—	—	V	I _C = 50μA
Collector-Emitter Breakdown Voltage		BV _{CEO}	40	—	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	DDTD122TU DDTD142TU	BV _{EBO}	5	—	—	V	I _E = 50μA I _E = 50μA
Collector Cutoff Current		I _{CBO}	—	—	0.5	μA	V _{CB} = 50V
Emitter Cutoff Current	DDTD122TU DDTD142TU	I _{EBO}	— —	— —	0.5 0.5	μA	V _{EB} = 4V
Collector-Emitter Saturation Voltage		V _{CE(sat)}	—	—	0.3	V	I _C = 50mA, I _B = 2.5mA
DC Current Transfer Ratio	DDTD122TU DDTD142TU	h _{FE}	100 100	250 250	600 600	—	I _C = 5mA, V _{CE} = 5V
Gain-Bandwidth Product (Note 6)		f _T	—	200	—	MHz	V _{CE} = 10V, I _E = 5mA, f = 100MHz

Note: 6. Transistor - for reference only.

Package Outline Dimensions

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

SOT323

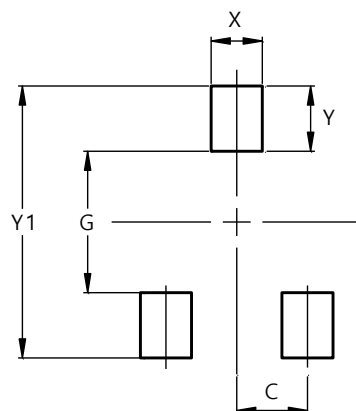


SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT323



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

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