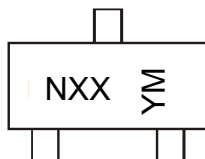


Marking Information



NXX = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: I = 2021)
 M = Month (ex: 9 = September)

Date Code Key

Year	2016		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	D		I	J	K	L	M	N	O	P	R	S

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

Characteristic		Symbol	Value	Unit
Supply Voltage, (3) to (2)		V_{CC}	50	V
Input Voltage, (1) to (2)	DDTD113EU	V_{IN}	-10 to +10	V
	DDTD123EU		-10 to +12	
	DDTD143EU		-10 to +30	
	DDTD114EU		-10 to +40	
	DDTD122JU		-5 to +5	
	DDTD113ZU		-5 to +10	
	DDTD123YU		-5 to +12	
	DDTD133HU		-6 to +20	
Input Voltage, (2) to (1)		$V_{EBO (MAX)}$	5	V
Output Current		I_C	500	mA

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

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

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

Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.) R1, R2 Types

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	0.5 0.5 0.5 0.5 0.5 0.3 0.3 0.3	—	—	V	V _{CC} = 5V, I _O = 100μA
	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	—	—	3.0 3.0 3.0 3.0 3.0 2.0 2.0 2.0	V	V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 10mA V _O = 0.3V, I _O = 30mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA
Output Voltage	V _{O(on)}	—	—	0.3V	V	I _O /I _I = 50mA/2.5mA
Input Current	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	—	—	7.2 3.8 1.8 0.88 28 7.2 3.6 2.4	mA	V _I = 5V
Output Current	I _{O(off)}	—	—	0.5	μA	V _{CC} = 50V, V _I = 0V
DC Current Gain	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	33 39 47 56 47 56 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, R2-Only Types

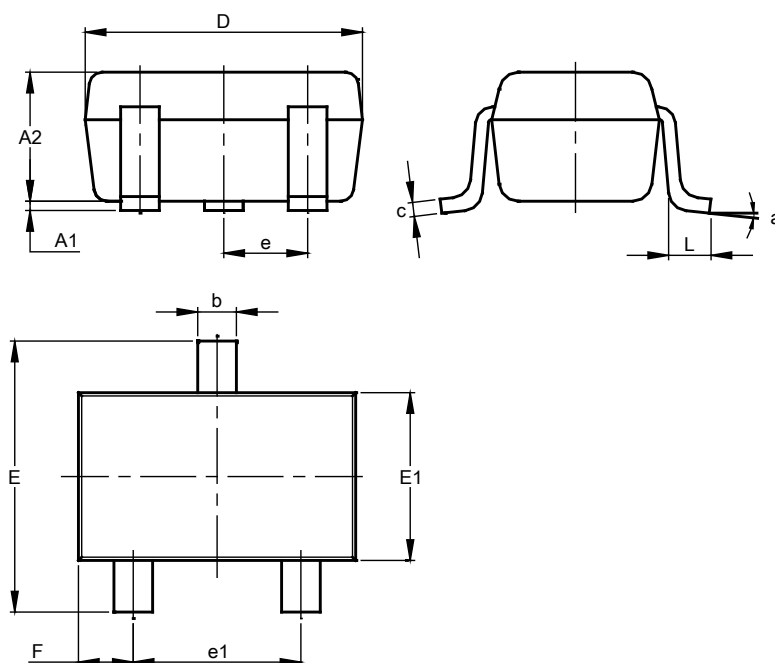
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	50	—	—	V	I _C = 50μA
Collector-Emitter Breakdown Voltage	BV _{CEO}	40	—	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	DDTD123TU DDTD143TU DDTD114TU DDTD114GU	5	—	—	V	I _E = 50μA I _E = 50μA I _E = 50μA I _E = 720μA
Collector Cutoff Current	I _{CBO}	—	—	0.5	μA	V _{CB} = 50V
Emitter Cutoff Current	DDTD123TU DDTD143TU DDTD114TU DDTD114GU	— — — 300	—	0.5 0.5 0.5 580	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	DDTD123TU DDTD143TU DDTD114TU DDTD114GU	100 100 100 56	250 250 250 —	600 600 600 —	—	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

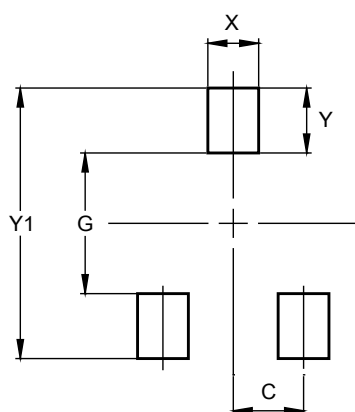


SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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