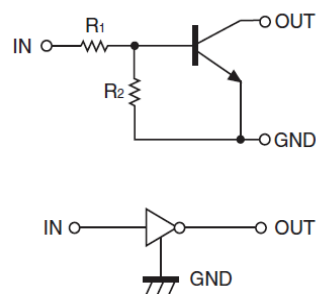


Features

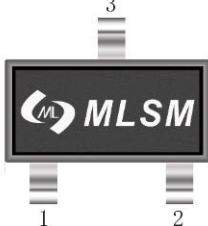
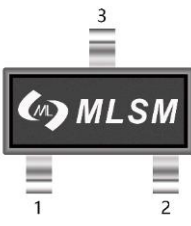
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

Equivalent Circuit



Halogen-Free

Pin Connections

DTC143EM 	SOT-723 1. IN 2. GND 3. OUT	DTC143EE 	SOT-523 1. IN 2. GND 3. OUT
DTC143EUA 	SOT-323 1. IN 2. GND 3. OUT	DTC143ECA 	SOT-23 1. IN 2. GND 3. OUT
DTC143EKA 	SOT-23-3L 1. IN 2. GND 3. OUT	DTC143ESA 	TO-92S 1. GND 2. OUT 3. IN

Ordering Information (Example)

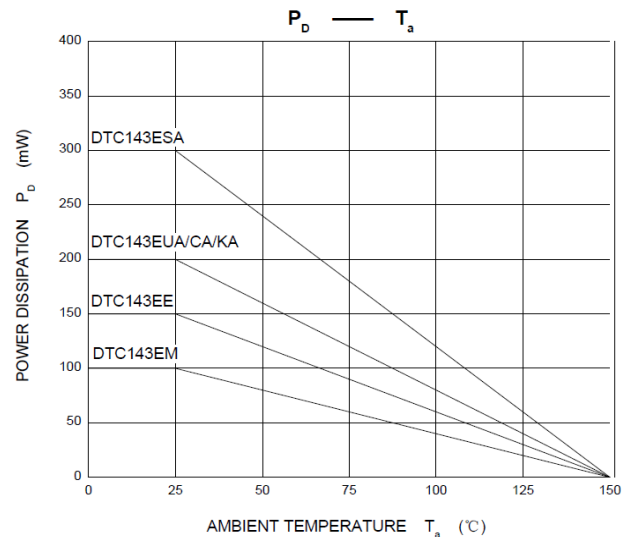
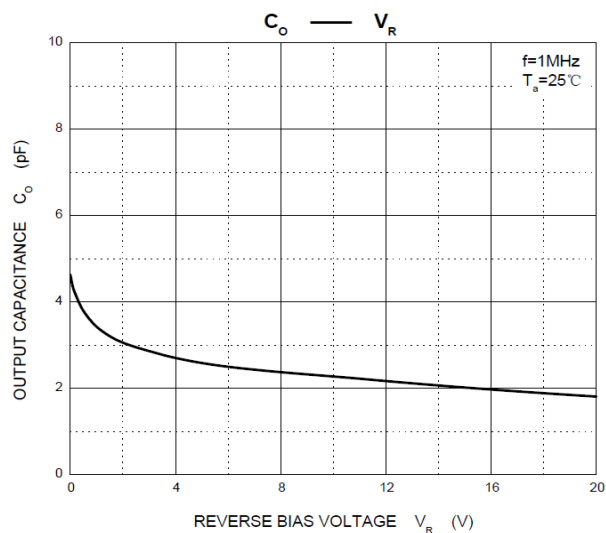
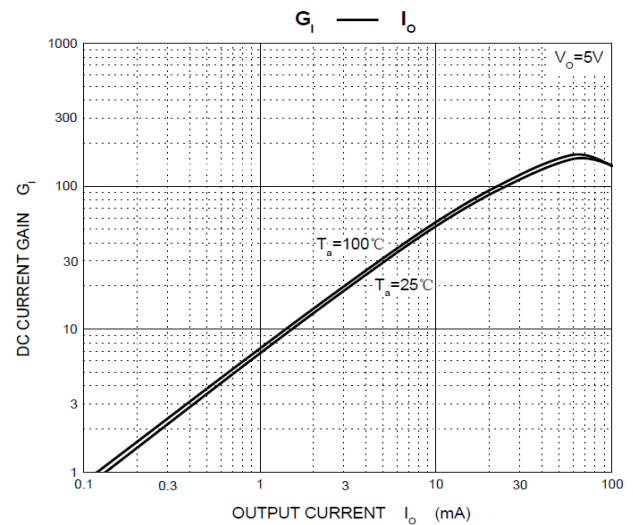
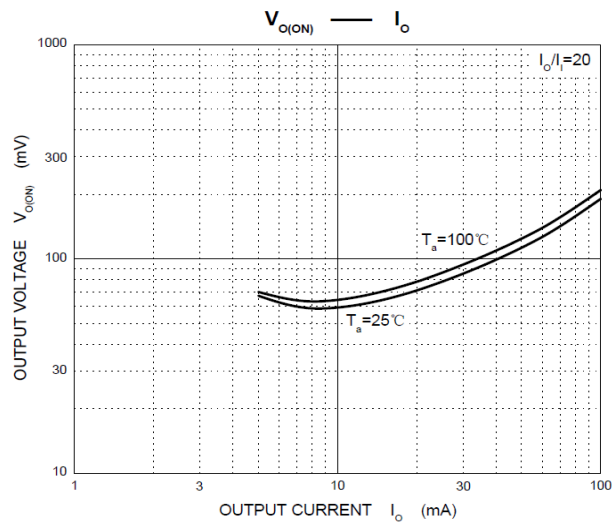
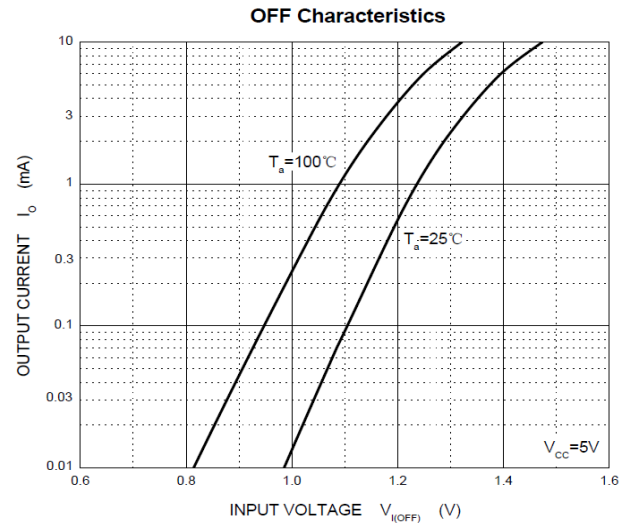
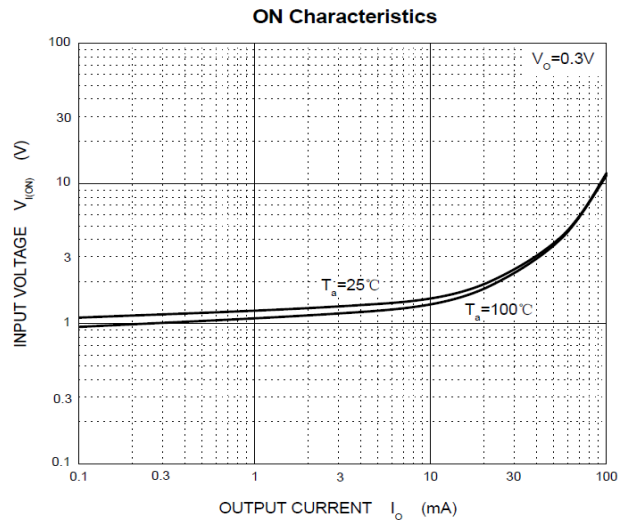
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
DTC143EM	SOT-723	23	8,000	120,000	480,000	7"reel
DTC143EE	SOT-523	23	3,000	45,000	180,000	7"reel
DTC143EUA	SOT-323	23	3,000	45,000	180,000	7"reel
DTC143EKA	SOT-23-3L	23	3,000	45,000	180,000	7"reel
DTC143ECA	SOT-23	23	3,000	45,000	180,000	7"reel
DTC143ESA	TO-92S	C143 ⁽²⁾ E·XXX	1,000	10,000	100,000	Bulk
DTC143ESA-TA	TO-92S	C143 ⁽²⁾ E·XXX	3,000	45,000	450,000	Bulk

Maximum Ratings(Ta=25°C unless otherwise noted)

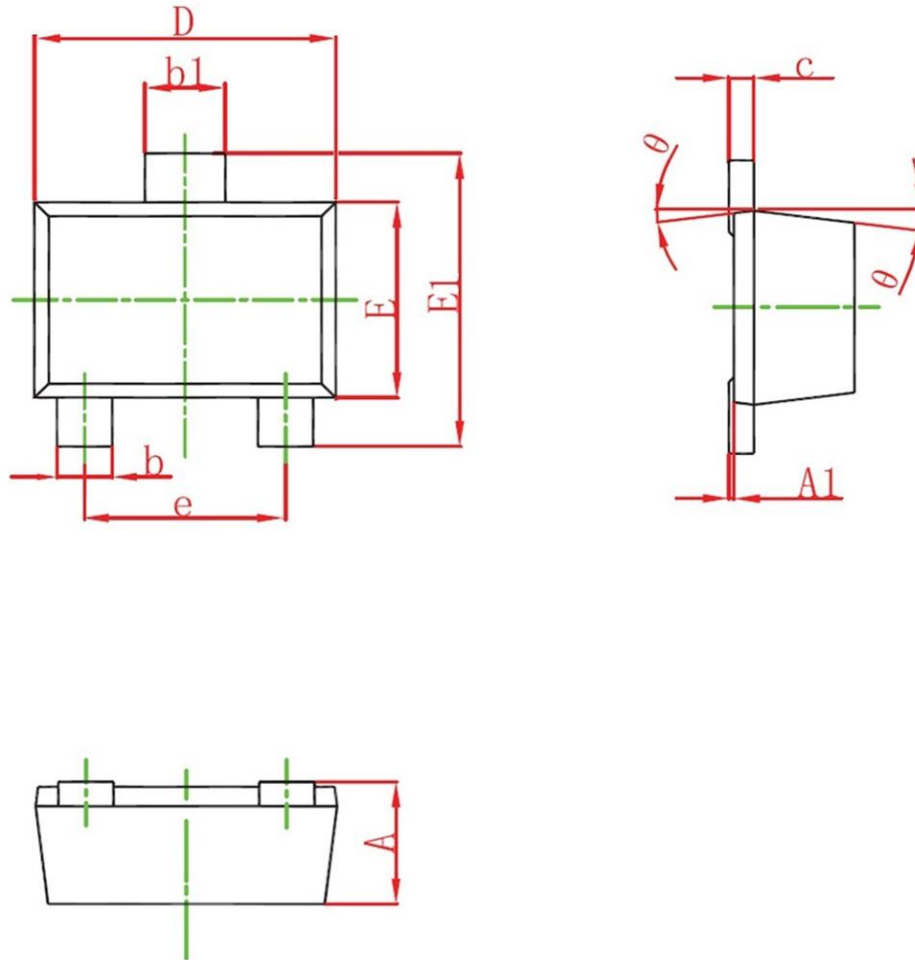
Symbol	Parameter	Limits(DTC143E)						Unit
		M	E	UA	KA	CA	SA	
V _{CC}	Supply Voltage	50						V
V _{IN}	Input Voltage	-10~+30						V
I _O	Output Current	100						mA
P _D	Power Dissipation	100	150	200	200	200	300	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150						°C

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{I(off)}	Input voltage	V _{CC} =5V, I _O =100μA	0.5	--	--	V
V _{I(on)}		V _O =0.3V, I _O =20mA	--	--	3	V
V _{O(on)}	Output voltage	I _O /I _F =10mA/0.5mA	--	--	0.3	V
I _I	Input current	V _I =5V	--	--	1.8	mA
I _{O(off)}	Output current	V _{CC} =50V, V _I =0	--	--	0.5	μA
G _I	DC current gain	V _O =5V, I _O =10mA	20	--	--	
R ₁	Input resistance		3.29	4.7	6.11	kΩ
R ₂ /R ₁	Resistance ratio		0.8	1	1.2	
f _T	Transition frequency	V _O =10V, I _O =5mA, f=100MHz	--	250	--	MHz

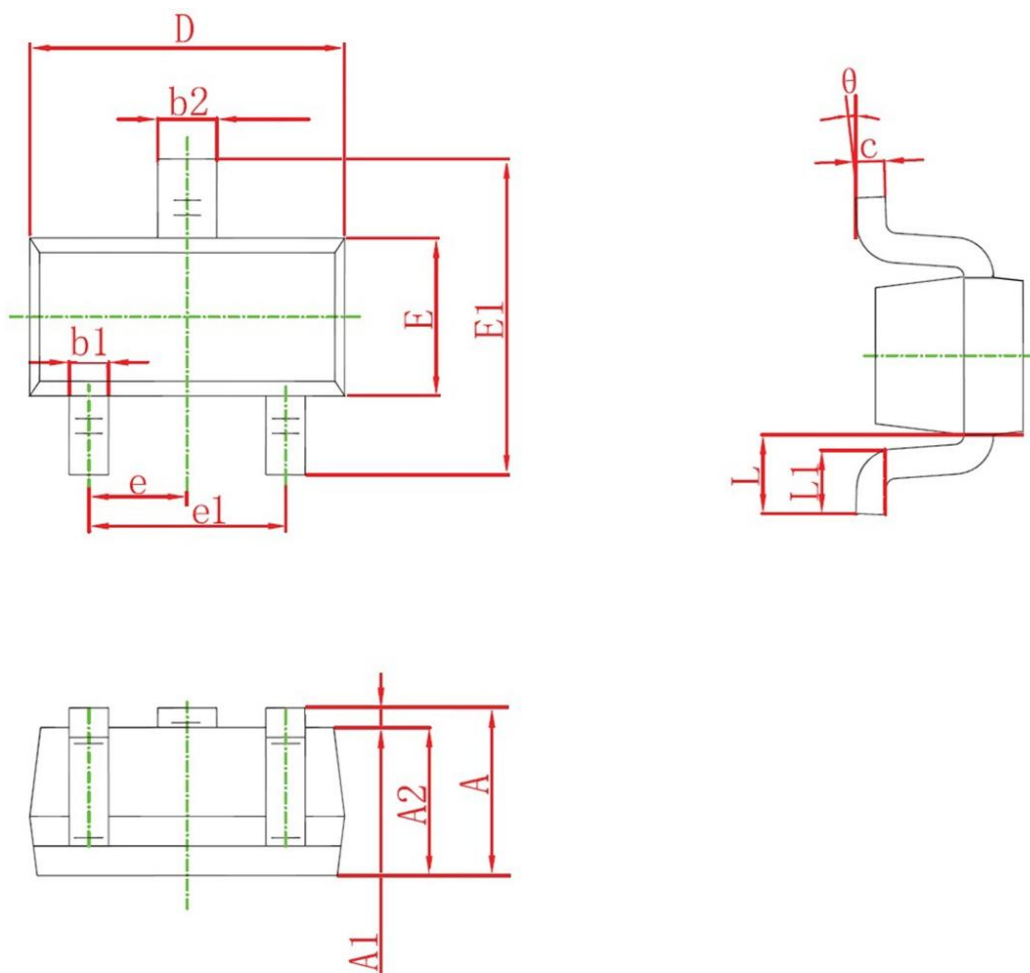
Typical Operating Characteristics


SOT-723 Package information



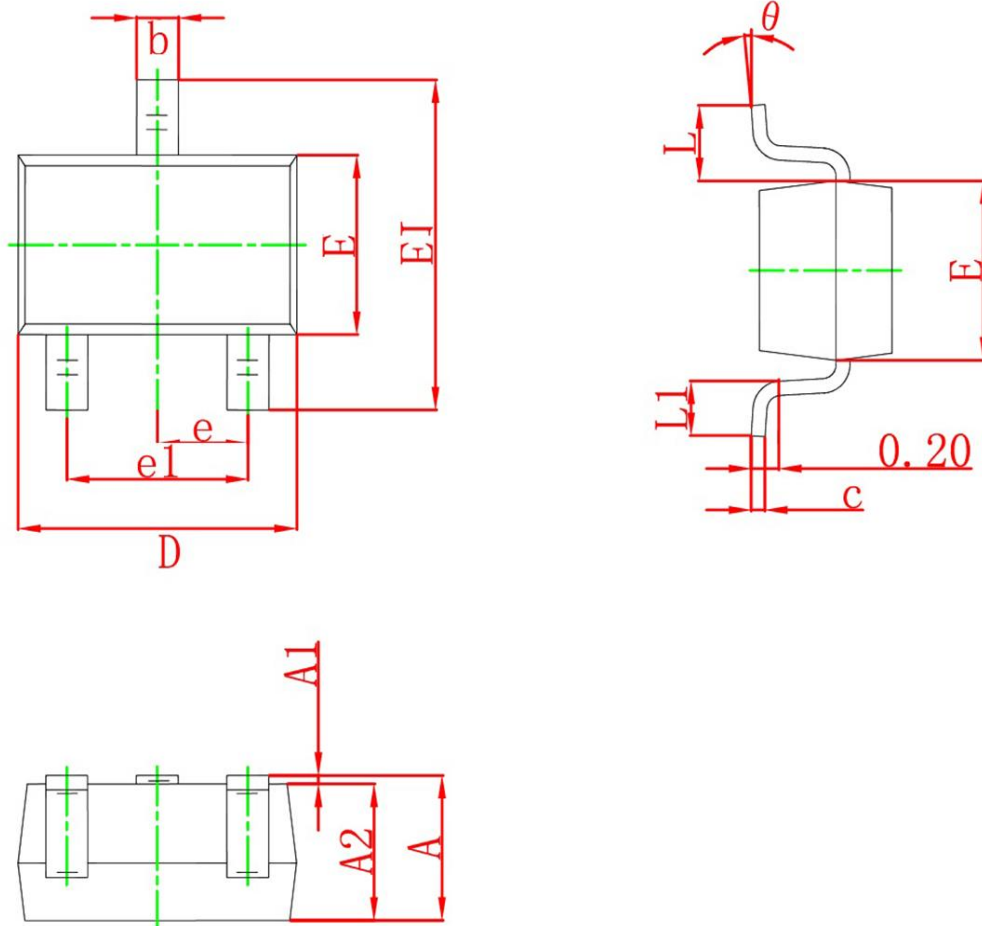
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.320	0.400	0.012	0.016
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.006	0.010
b1	0.270	0.370	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.046	0.050
E	0.750	0.850	0.030	0.034
E1	1.150	1.250	0.046	0.050
e	0.800TYP		0.020TYP	
θ	7°REF		7°REF	

SOT-523 Package information



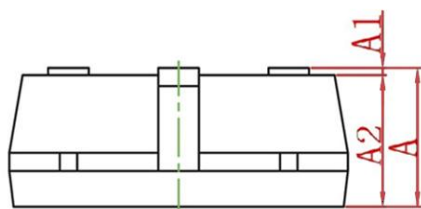
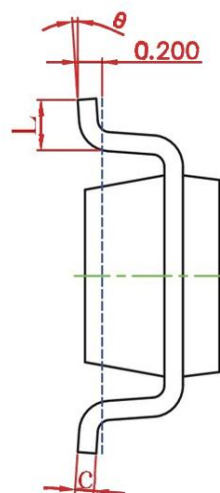
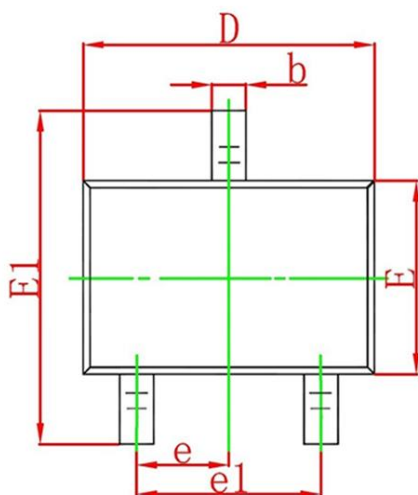
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-323 Package information



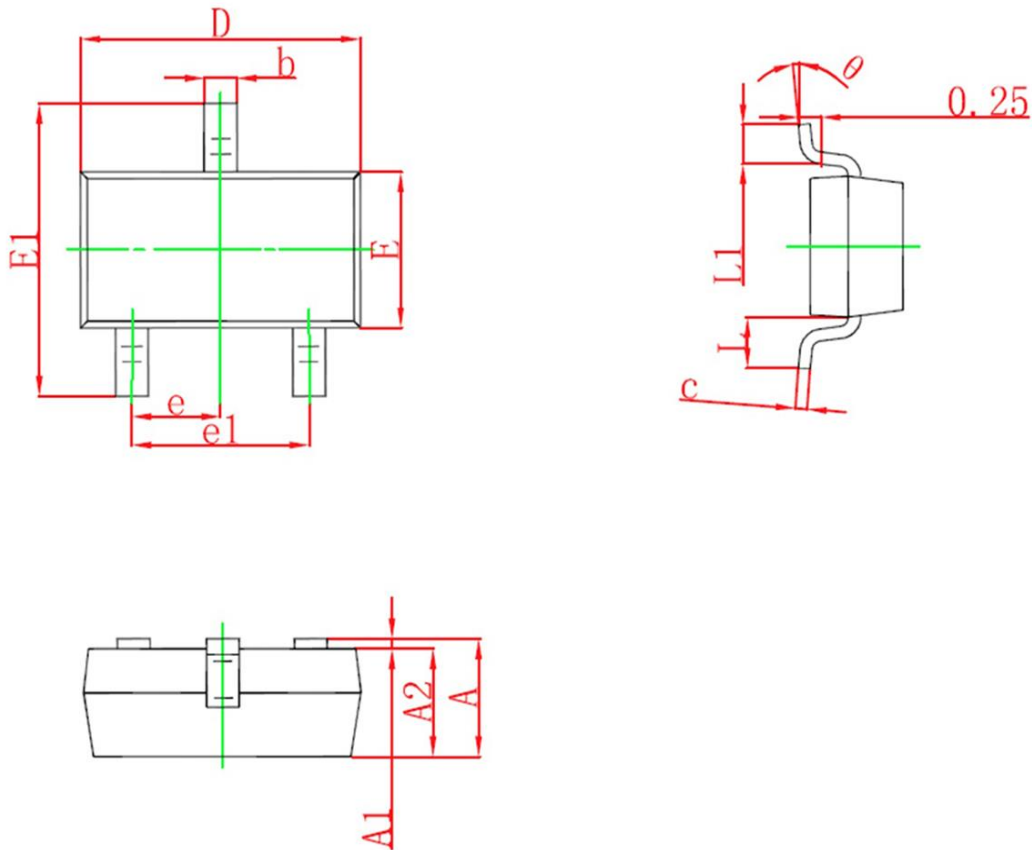
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-23-3L Package information



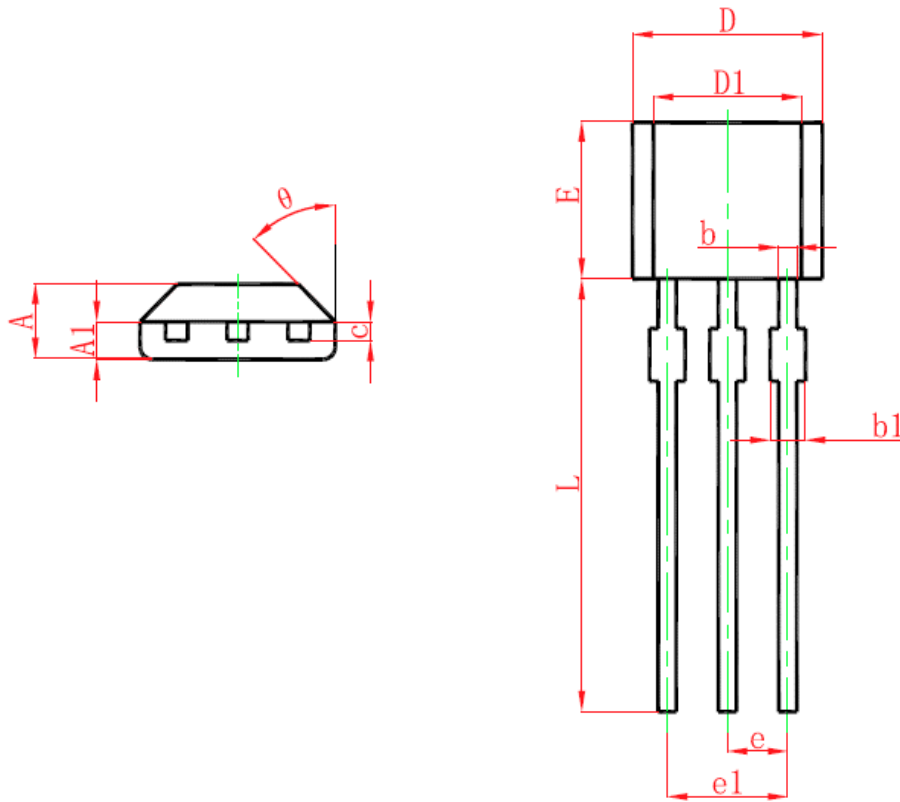
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.042	0.050
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.042	0.046
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.112	0.120
E	1.500	1.700	0.060	0.068
E1	2.650	2.950	0.106	0.118
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

TO-92S Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.420	1.620	0.056	0.064
A1	0.660	0.860	0.026	0.034
b	0.330	0.480	0.013	0.019
b1	0.400	0.510	0.016	0.020
c	0.330	0.510	0.013	0.020
D	3.900	4.100	0.154	0.162
D1	2.280	2.680	0.090	0.106
E	3.050	3.250	0.120	0.128
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	15.100	15.500	0.593	0.611
θ	45° TYP		45° TYP	