

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

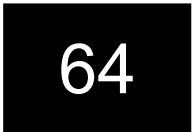
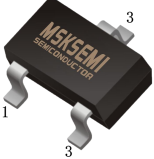
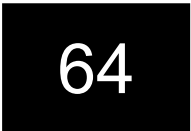
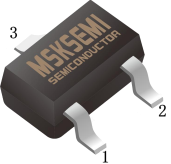
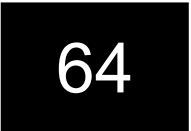
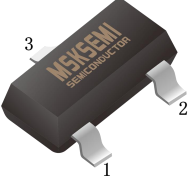
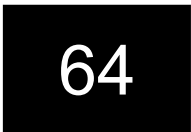
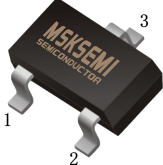
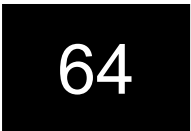
DTC114YM/YE/YUA/YKA/YCA

Product specification

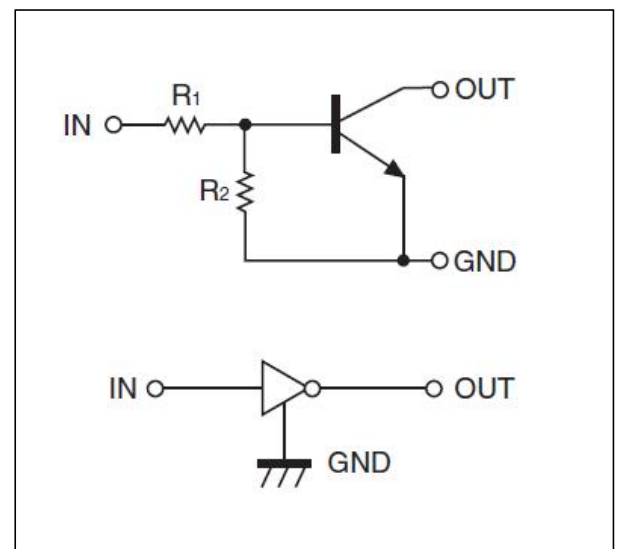
Features

- 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

Reference News

Pin Configuration		Marking
 SOT-723 1.IN 2.GND 3.OUT	DTC114YM	
 SOT-523 1.IN 2.GND 3.OUT	DTC114YE	
 SOT-323 1.IN 2.GND 3.OUT	DTC114YUA	
 SOT-23-3L 1.IN 2.GND 3.OUT	DTC114YKA	
 SOT-23 1.IN 2.GND 3.OUT	DTC114YCA	

Equivalent Circu



ORDERING INFORMATION

P/N	MARK	Package	Packing Method	Pack Quantity
DTC114YM	64	SOT-723	Reel	8000pcs/Reel
DTC114YE	64	SOT-523	Reel	3000pcs/Reel
DTC114YUA	64	SOT-323	Reel	3000pcs/Reel
DTC114YKA	64	SOT-23-3L	Reel	3000pcs/Reel
DTC114YCA	64	SOT-23	Reel	3000pcs/Reel

MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

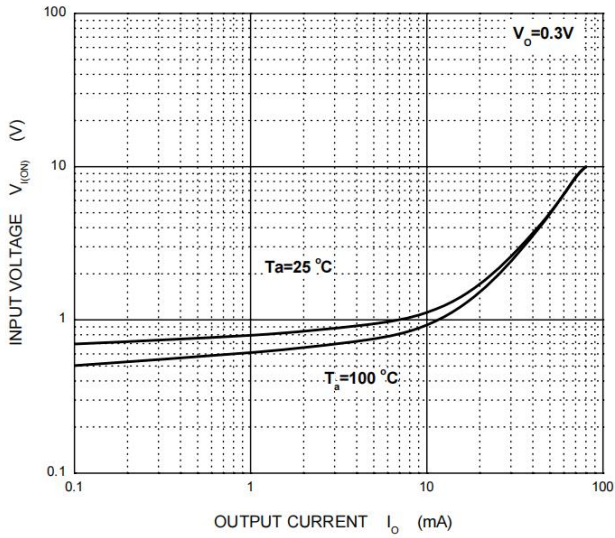
Symbol	Parameter	YM	YE	YUA	YKE	YCA	Unit
V _{CC}	Supply Voltage	50					V
V _{IN}	Input Voltage	-6~+40					V
I _O	Output Current	70					mA
I _{CM}	Peak Collector Current	100					mA
P _D	Power Dissipation	100	150	200	200	200	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150					℃

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

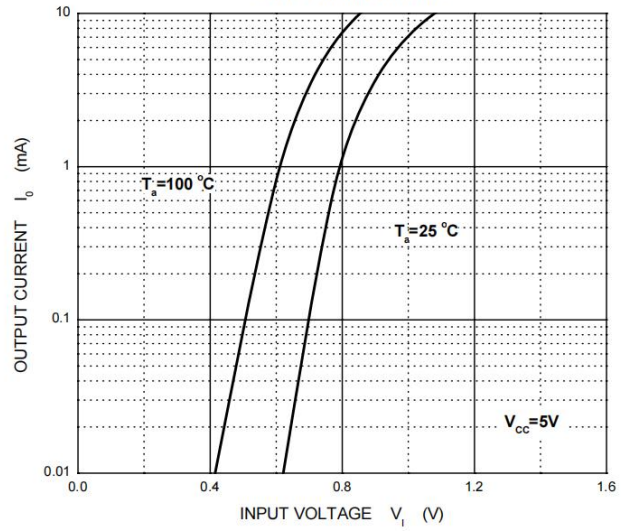
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V _{I(off)}	V _{CC} =5V, I _O =100μA	0.3			V
	V _{I(on)}	V _O =0.3V, I _O =1mA			1.4	V
Output voltage	V _{O(on)}	I _O /I _I =5mA/0.25mA			0.3	V
Input current	I _I	V _I =5V			0.88	mA
Output current	I _{O(off)}	V _{CC} =50V, V _I =0			0.5	μA
DC current gain	G _I	V _O =5V, I _O =5mA	68			
Input resistance	R ₁		7	10	13	kΩ
Resistance ratio	R ₂ /R ₁		3.7	4.7	5.7	
Transition frequency	f _T	V _O =10V, I _O =5mA, f=100MHz		250		MHz

Typical Characteristics

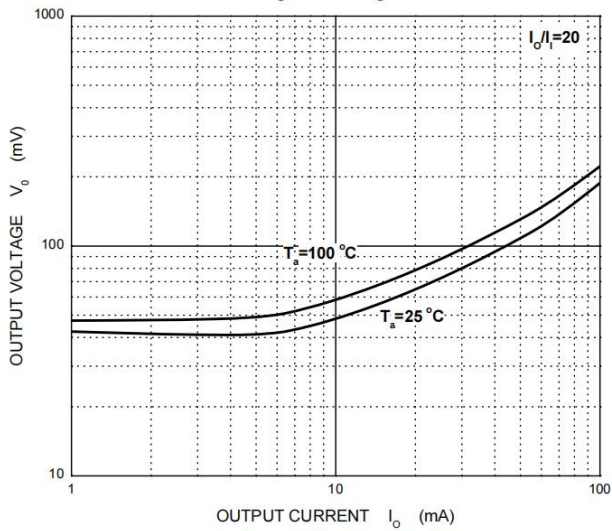
ON Characteristics



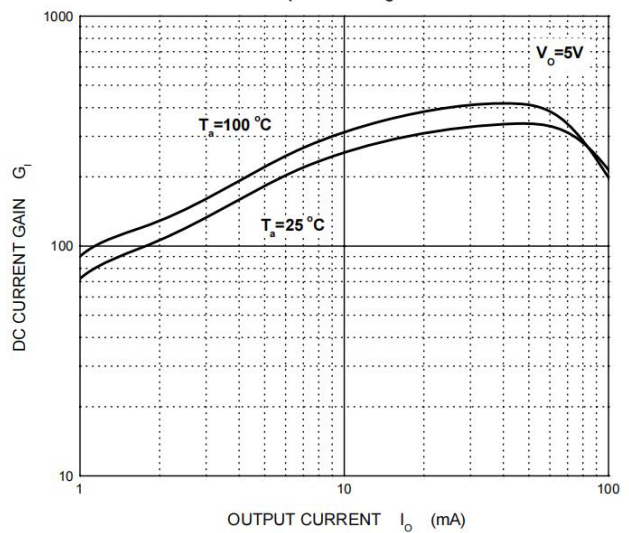
OFF Characteristics



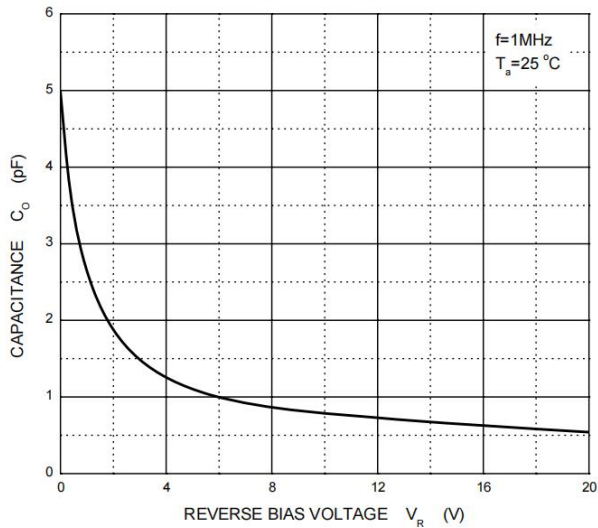
V_o — I_o



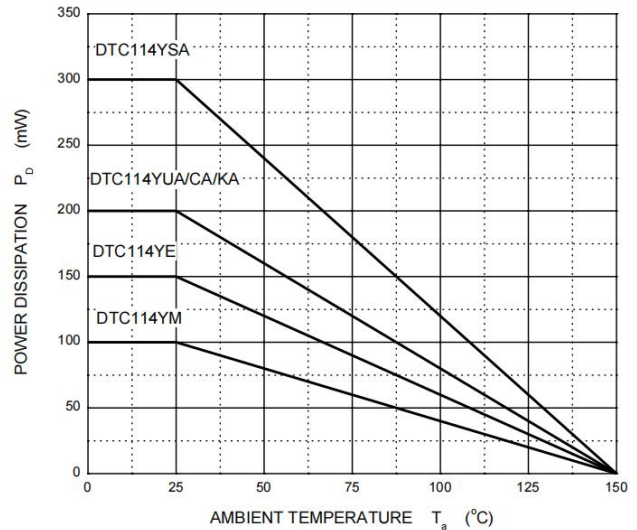
G_i — I_o



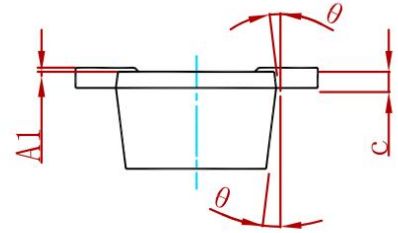
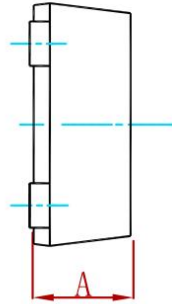
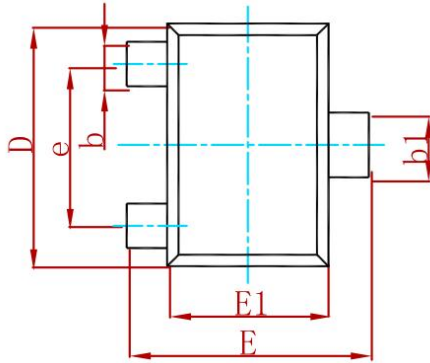
C_o — V_R



P_D — T_a

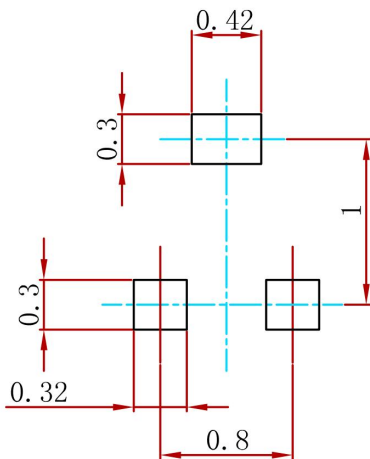


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP		0.031TYP	
θ	7° REF.		7° REF.	

Suggested Pad Layout



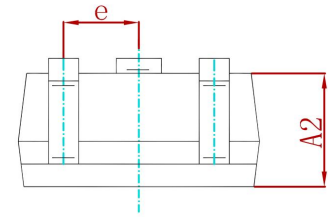
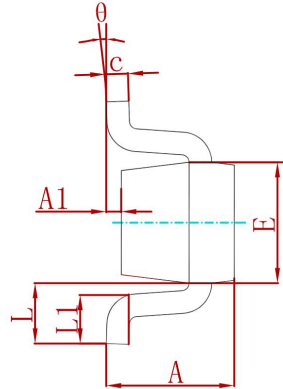
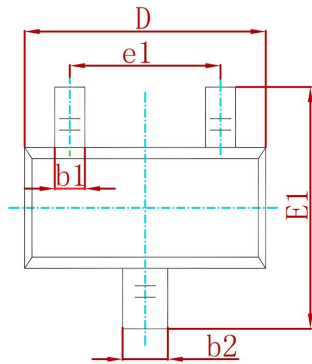
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

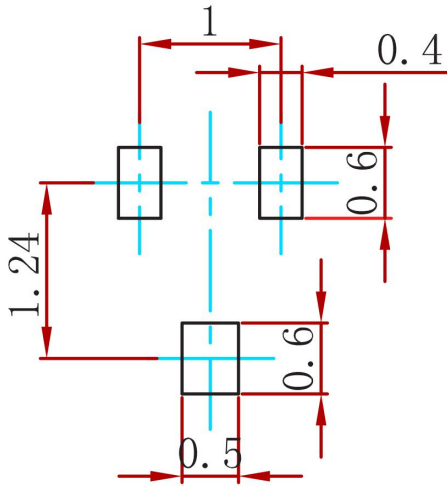
P/N	PKG	QTY
DTC114YM	SOT-723	8000

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		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	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



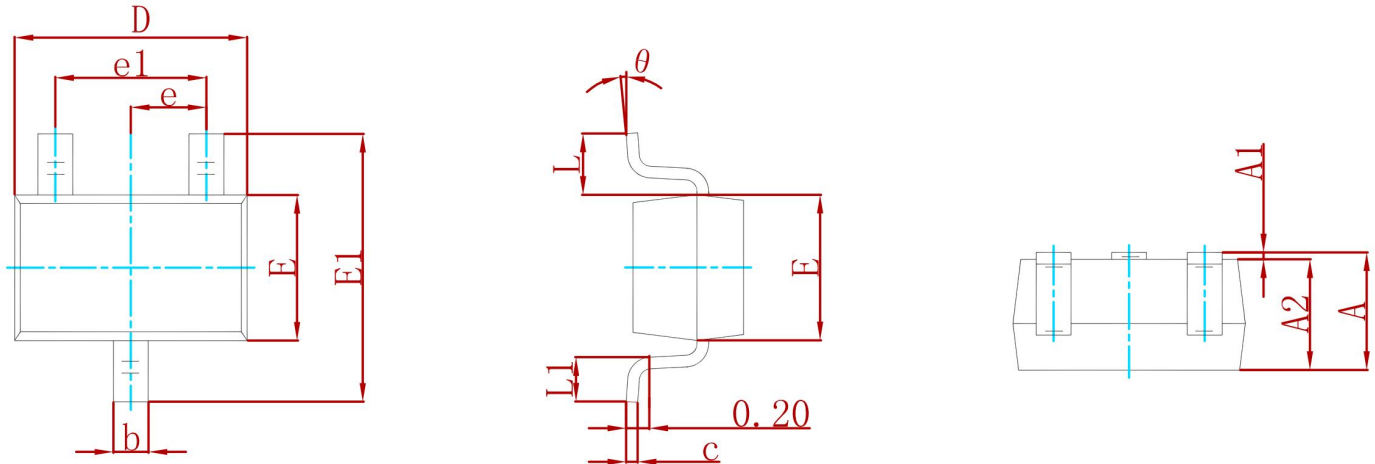
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

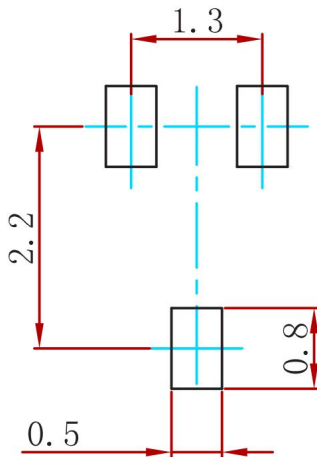
P/N	PKG	QTY
DTC114YE	SOT-523	3000

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		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	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



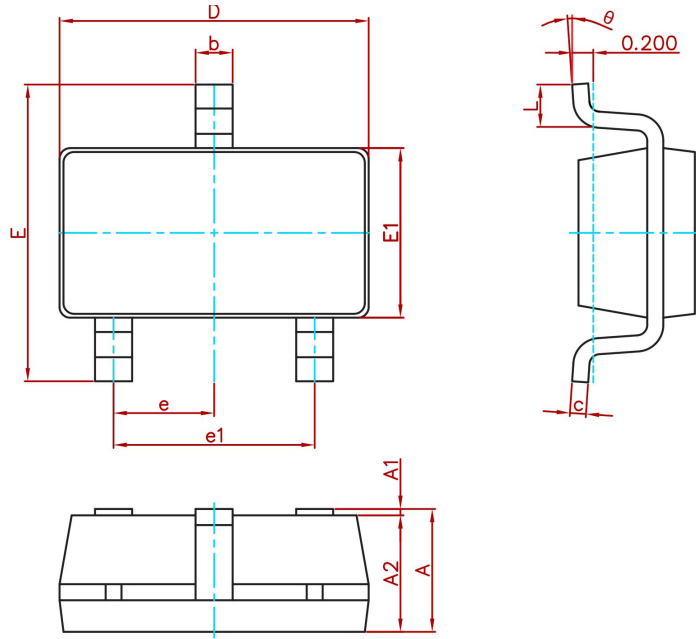
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

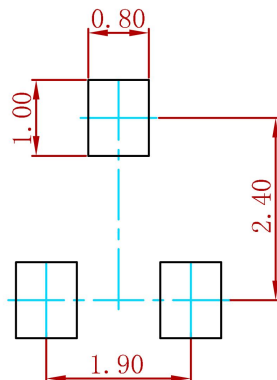
P/N	PKG	QTY
DTC114YUA	SOT-323	3000

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950 (BSC)		0.037 (BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
9	0°	8°	0°	8°

Suggested Pad Layout



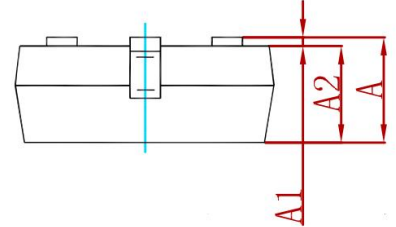
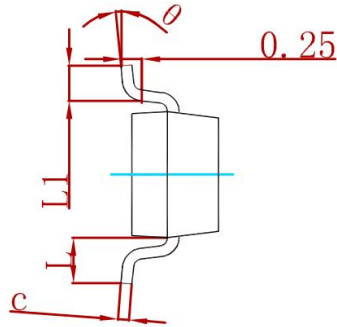
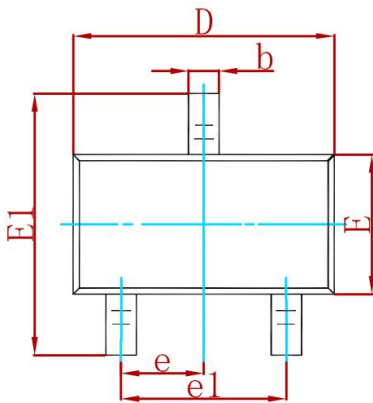
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

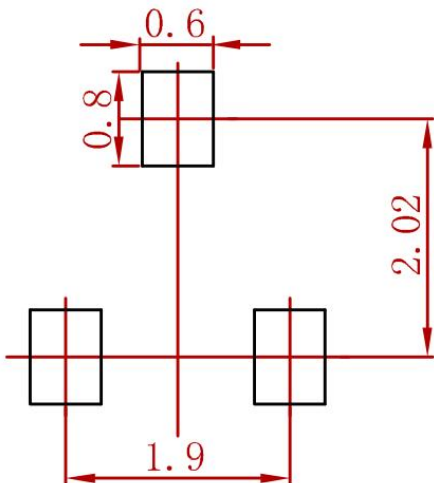
P/N	PKG	QTY
DTC114YKA	SOT-23-3L	3000

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		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
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
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°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
DTC114YCA	SOT-23	3000

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