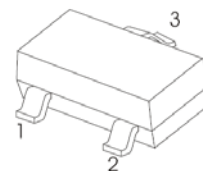


SOT-23-3L Plastic-Encapsulate MOSFETS

■ Features

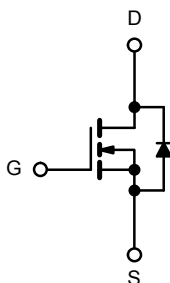
- $V_{DS} (V) = 40V$
- $I_D = 5.6 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 42m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 51m\Omega (V_{GS} = 4.5V)$
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

SOT - 23



1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



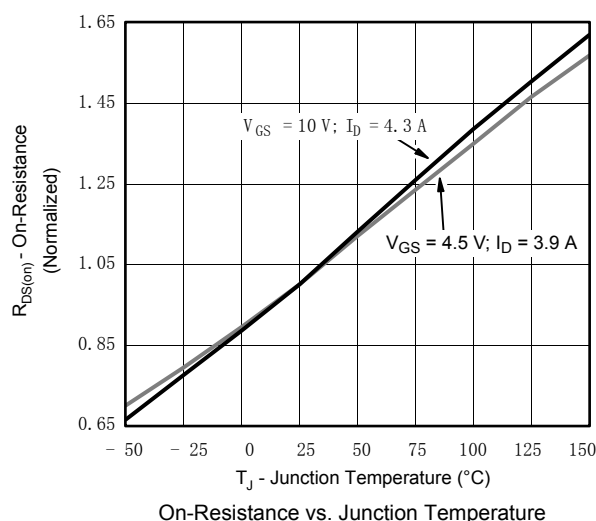
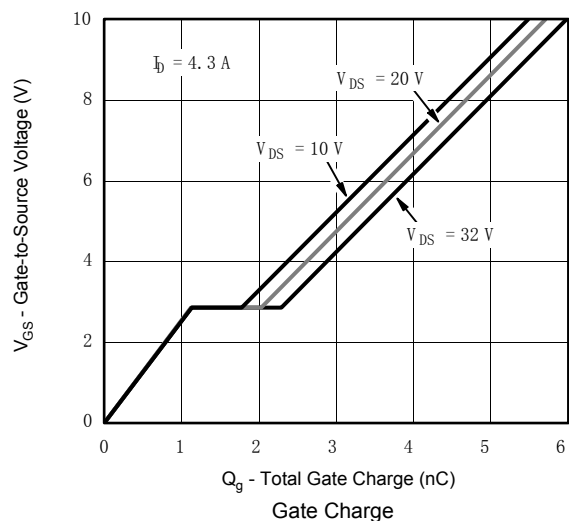
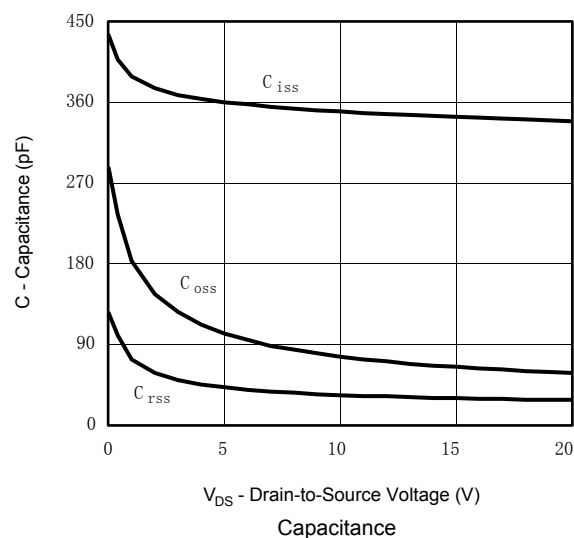
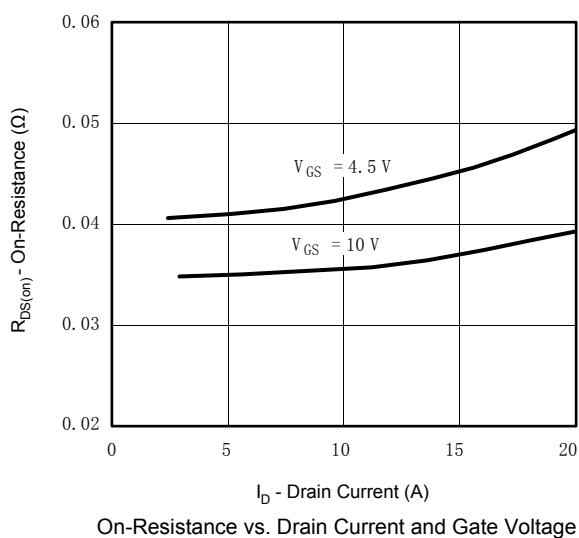
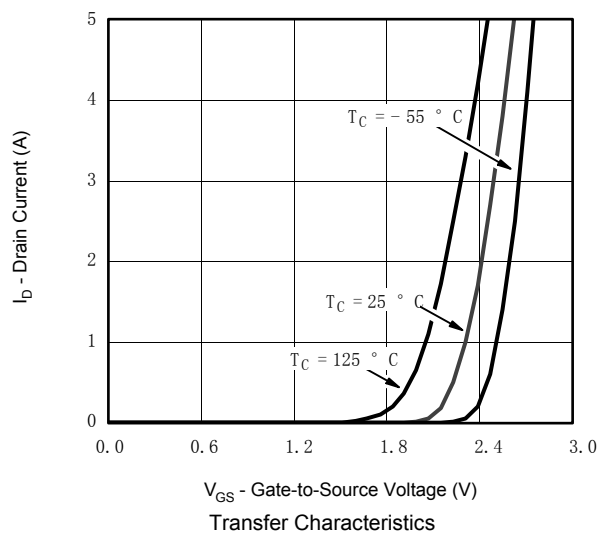
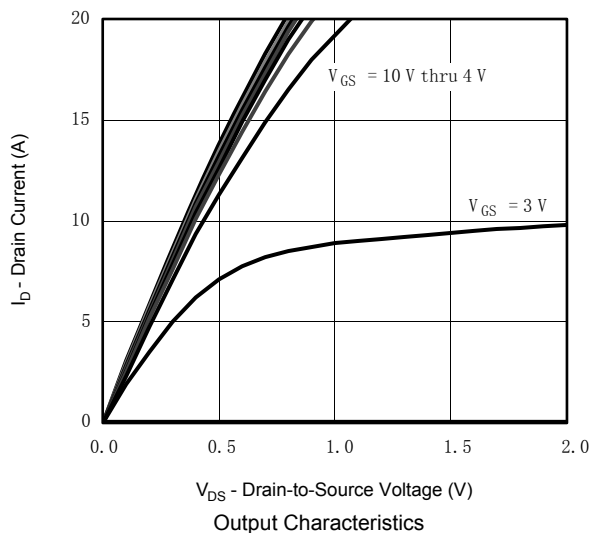
■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_c=25^\circ C$	I_D	5.6	A
	$T_c=70^\circ C$		4.5	
	$T_a=25^\circ C$		4.3	
	$T_a=70^\circ C$		3.5	
Pulsed Drain Current		I_{DM}	20	
Power Dissipation	$T_c=25^\circ C$	P_D	2.1	W
	$T_c=70^\circ C$		1.3	
	$T_a=25^\circ C$		1.25	
	$T_a=70^\circ C$		0.8	
Thermal Resistance.Junction- to-Ambient		R_{thJA}	100	$^\circ C/W$
Thermal Resistance.Junction- to-Foot		R_{thJF}	60	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

SOT-23-3L Plastic-Encapsulate MOSFETS
■ Electrical Characteristics Ta = 25°C

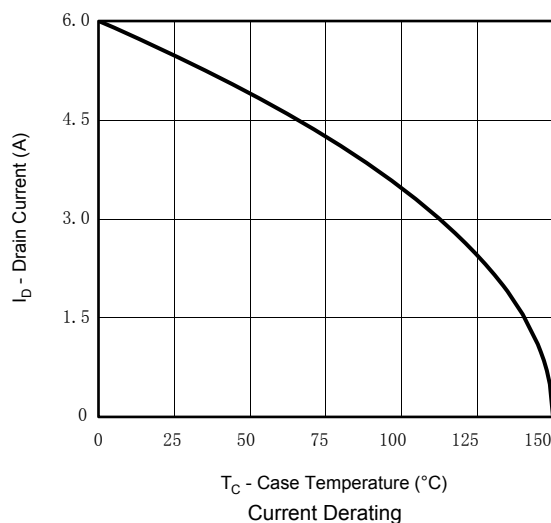
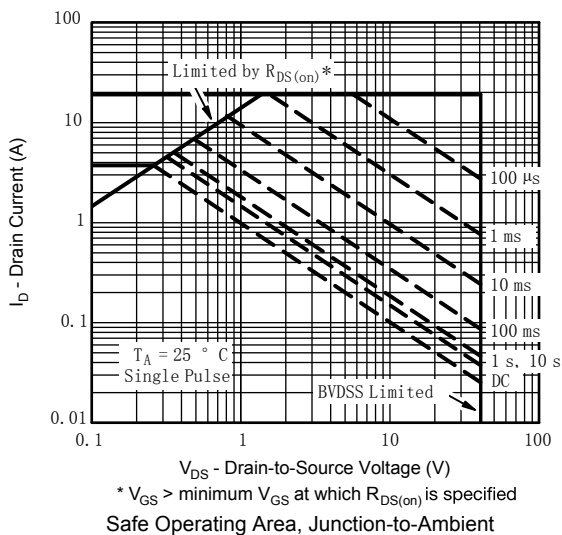
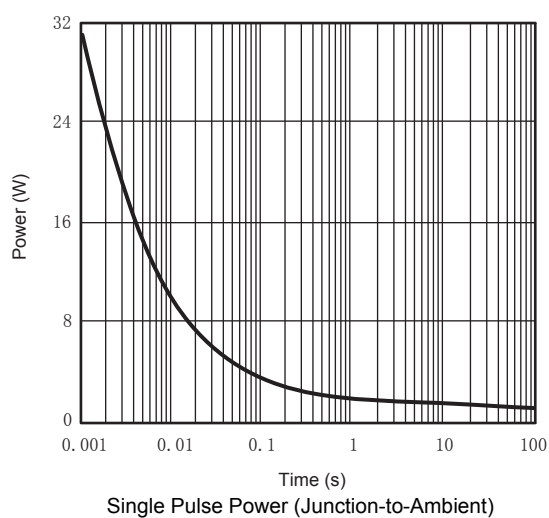
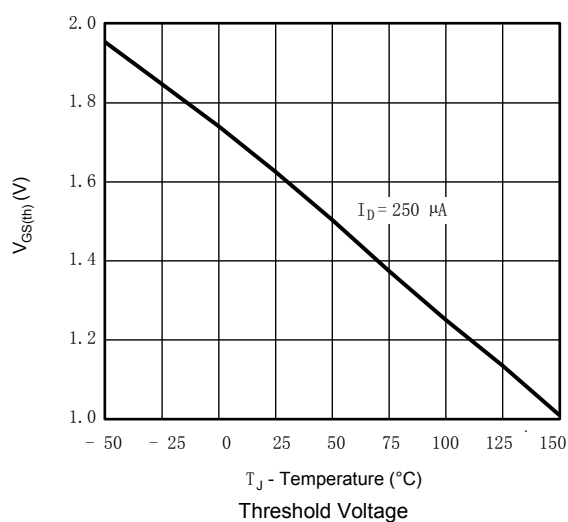
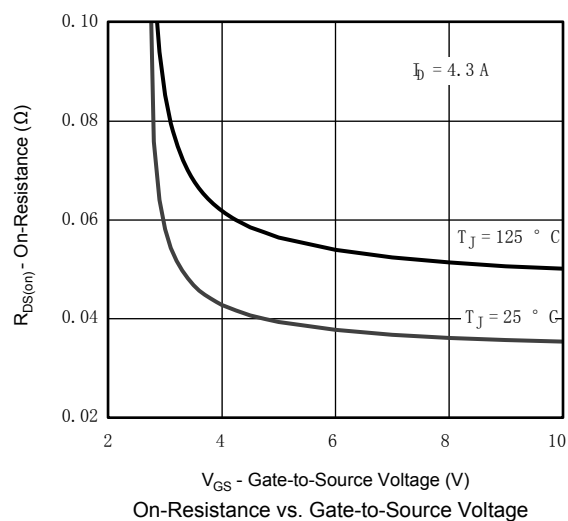
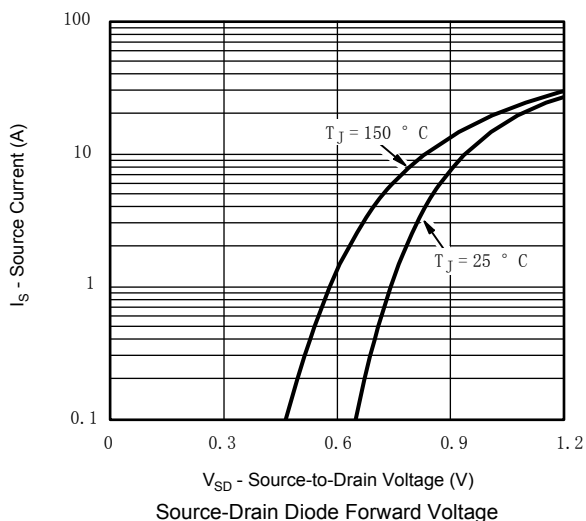
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu A, V_{GS}=0V$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V, V_{GS}=0V$			1	μA
		$V_{DS}=40V, V_{GS}=0V, T_J=70^\circ C$			10	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2		2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=4.3A$			42	$m\Omega$
		$V_{GS}=4.5V, I_D=3.9A$			51	
On State Drain Current	$I_{D(on)}$	$V_{DS}\geq 5V, V_{GS}=10V$	20			A
Forward Transconductance	g_{FS}	$V_{DS}=20V, I_D=4.3A$		17		S
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=20V, f=1MHz$		340		pF
Output Capacitance	C_{oss}			60		
Reverse Transfer Capacitance	C_{rss}			30		
Gate Resistance	R_g	$V_{GS}=0V, V_{DS}=0V, f=1MHz$	0.6		6.6	Ω
Total Gate Charge	Q_g	$V_{GS}=20V, V_{DS}=10V, I_D=4.3A$		5.8	9	nC
		$V_{GS}=20V, V_{DS}=4.5V, I_D=4.3A$		2.9	6	
Gate Source Charge	Q_{gs}			1.1		
Gate Drain Charge	Q_{gd}			0.9		
Turn-On DelayTime	$t_{d(on)}$	$V_{DD}=20V, R_L=5.7\Omega$ $I_D=3.5A, V_{GEN}=4.5V, R_G=1\Omega$		12	20	ns
Turn-On Rise Time	t_r			50	75	
Turn-Off DelayTime	$t_{d(off)}$			10	20	
Turn-Off Fall Time	t_f			8	16	
Turn-On DelayTime	$t_{d(on)}$	$V_{DD}=20V, R_L=5.7\Omega$ $I_D=3.5A, V_{GEN}=10V, R_G=1\Omega$		7	14	ns
Turn-On Rise Time	t_r			20	30	
Turn-Off DelayTime	$t_{d(off)}$			14	21	
Turn-Off Fall Time	t_f			8	16	
Body Diode Reverse Recovery Time	t_{rr}	$I_F=3.5A, di/dt=100A/\mu s, T_J=25^\circ C$		15	23	nC
Body Diode Reverse Recovery Charge	Q_{rr}			7	14	
Reverse Recovery Fall Time	t_a			11		ns
Reverse Recovery Rise Time	t_b			4		
Maximum Body-Diode Continuous Current	I_S	$T_C=25^\circ C$			1.75	A
Pulse Diode Forward Current	I_{SM}				20	
Diode Forward Voltage	V_{SD}	$I_S=3.5A, V_{GS}=0V$			1.2	V

■ Typical Characteristics



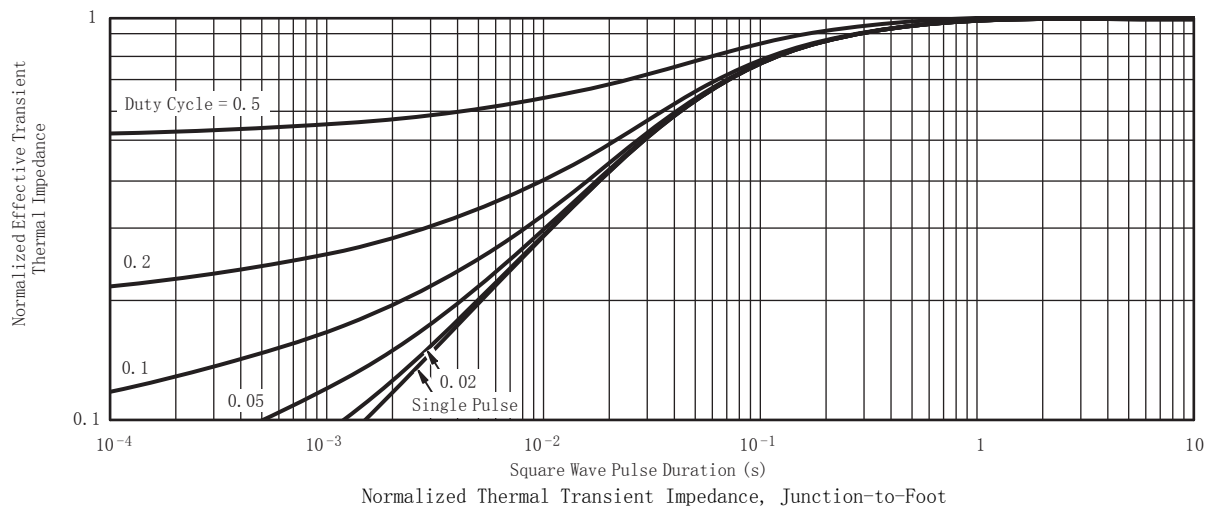
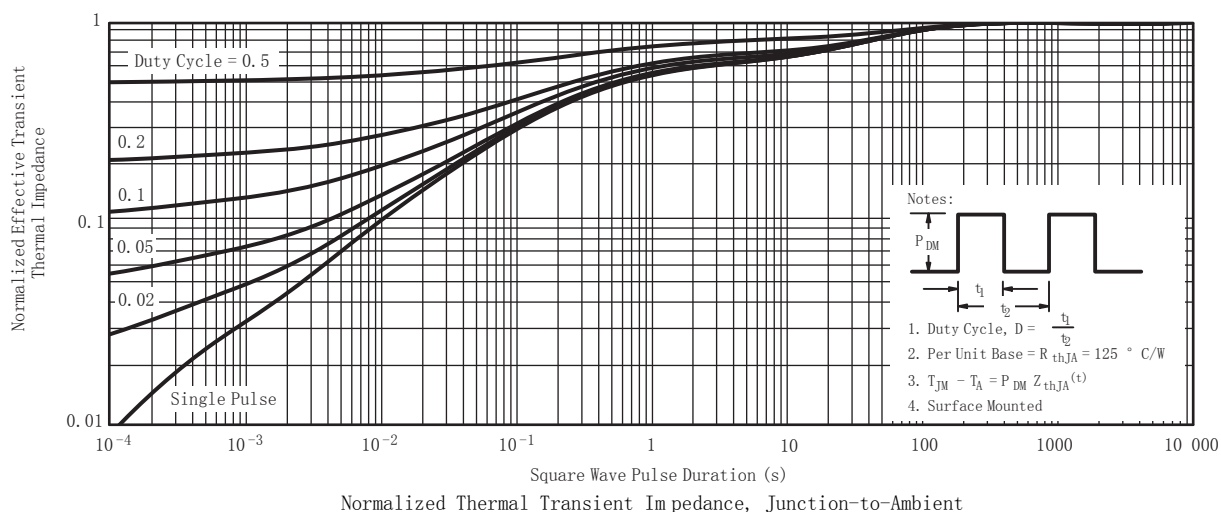
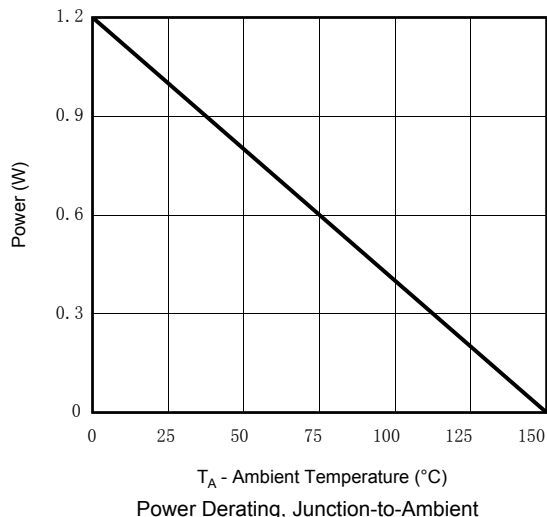
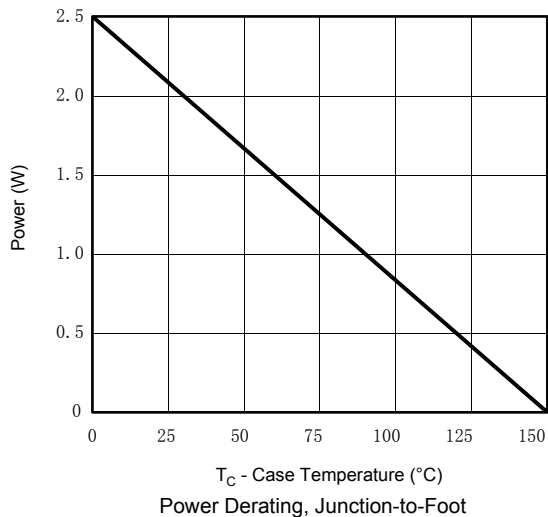
SOT-23-3L Plastic-Encapsulate MOSFETS

Typical Characteristics



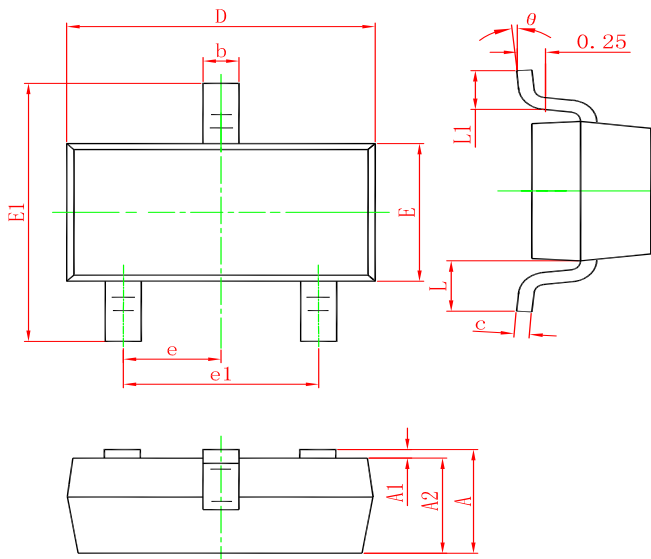
SOT-23-3L Plastic-Encapsulate MOSFETS

■ Typical Characteristics



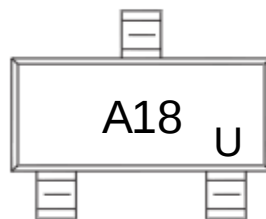
SOT-23-3L Plastic-Encapsulate MOSFETS

SOT-23 PACKAGE OUTLINE DIMENSIONS



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°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
UMW SI2318A	SOT-23	3000	Tape and reel