

GSM2318A

40V N-Channel Enhancement Mode MOSFET

Product Description

GSM2318A, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

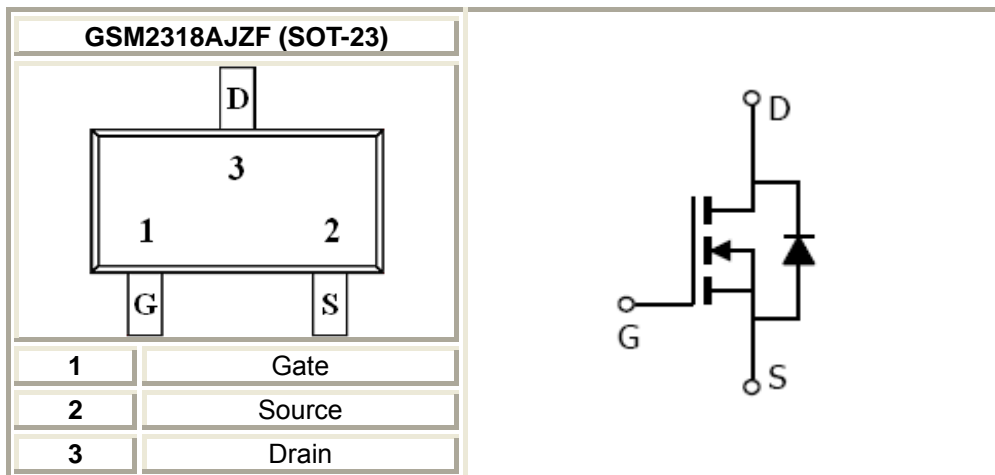
Features

- 40V/2.6A, $R_{DS(ON)}=68m\Omega@V_{GS}=10V$
- 40V/2.2A, $R_{DS(ON)}=88m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 package design

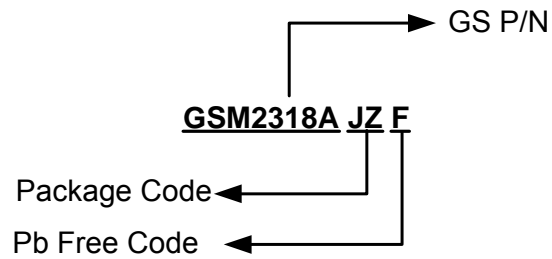
Applications

- Portable Equipment
- Battery Powered System
- Net Working System

Packages & Pin Assignments

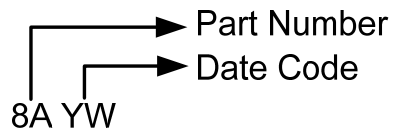


Ordering Information



Part Number	Package	Quantity Reel
GSM2318AJZF	SOT-23	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

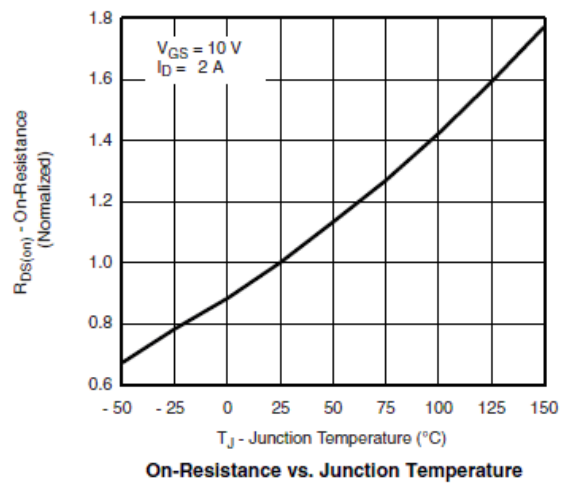
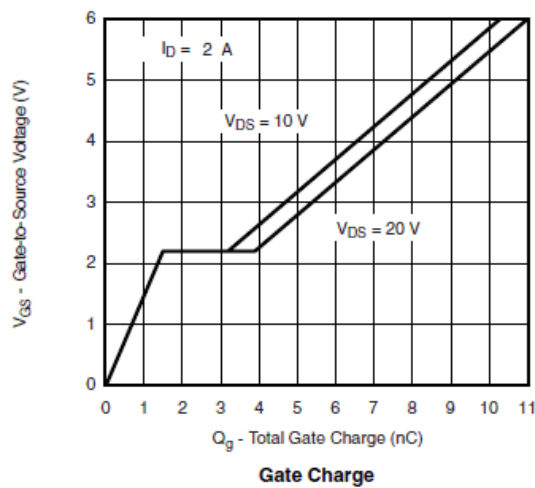
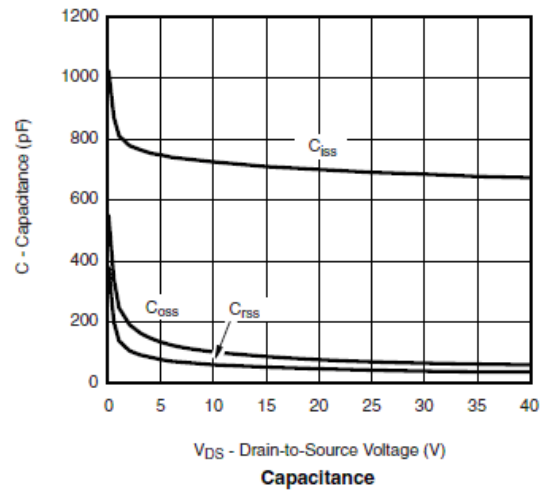
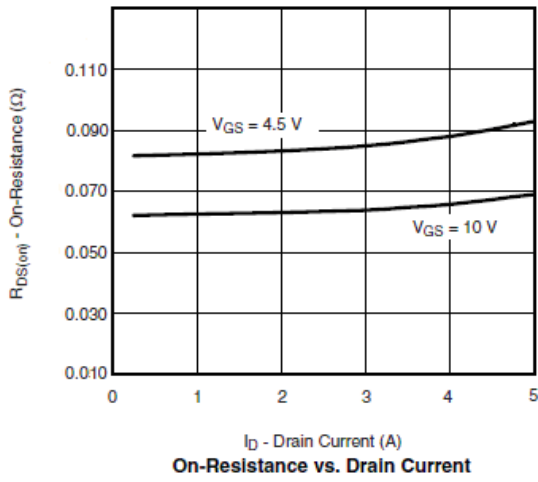
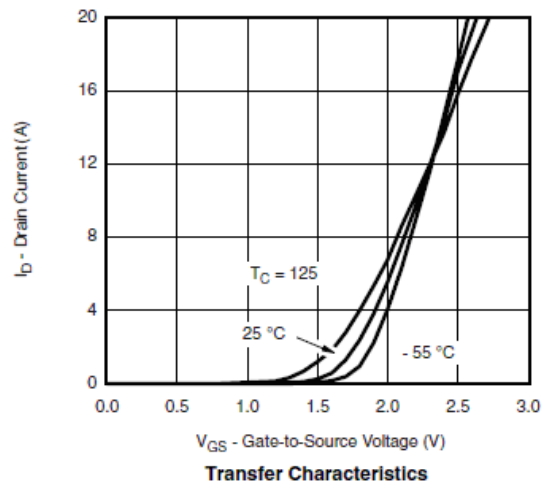
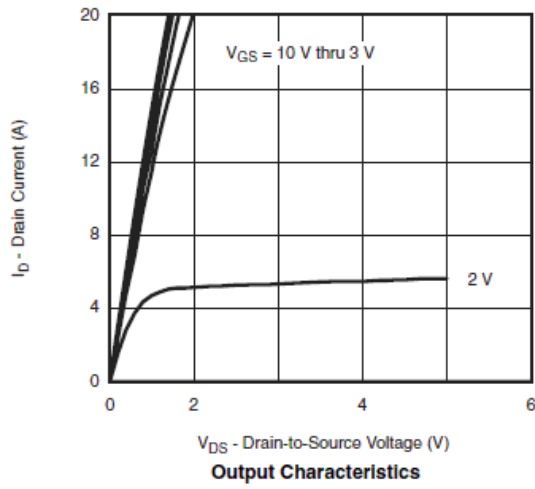
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	40	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	2.6
		T _A =70°C	2.2
I _{DM}	Pulsed Drain Current	10	A
I _S	Continuous Source Current(Diode Conduction)	1.6	A
P _D	Power Dissipation	T _A =25°C	1.25
		T _A =70°C	0.8
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	120	°C/W

Electrical Characteristics

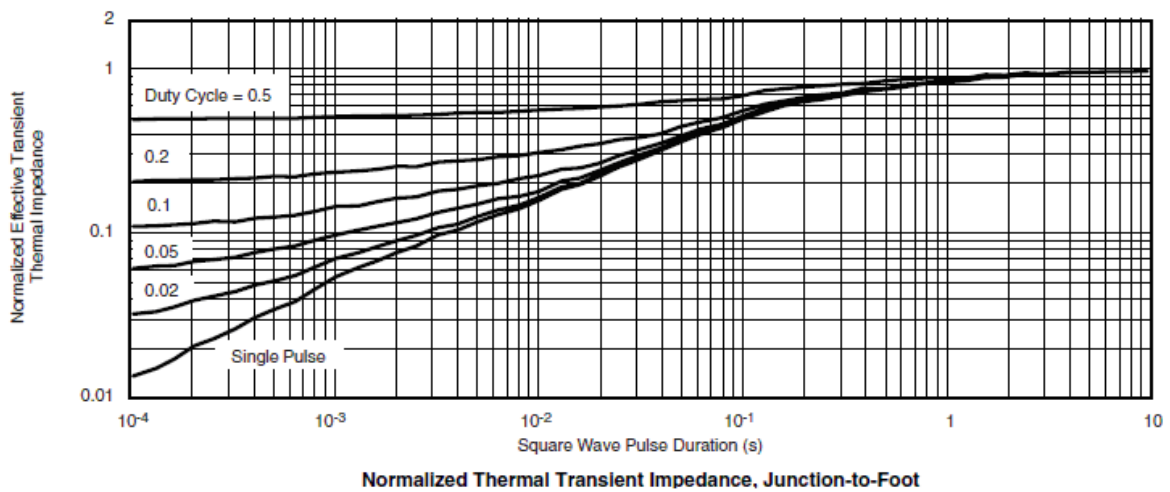
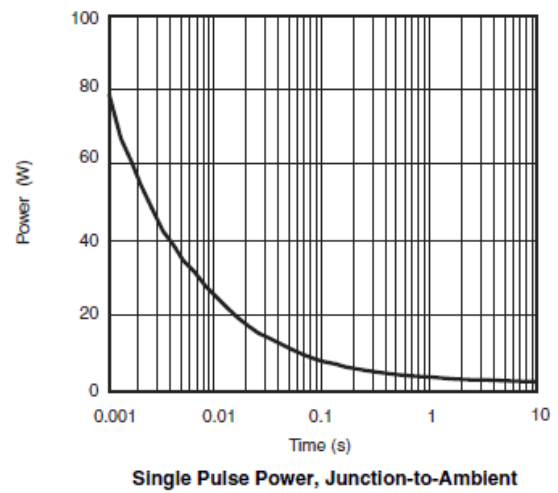
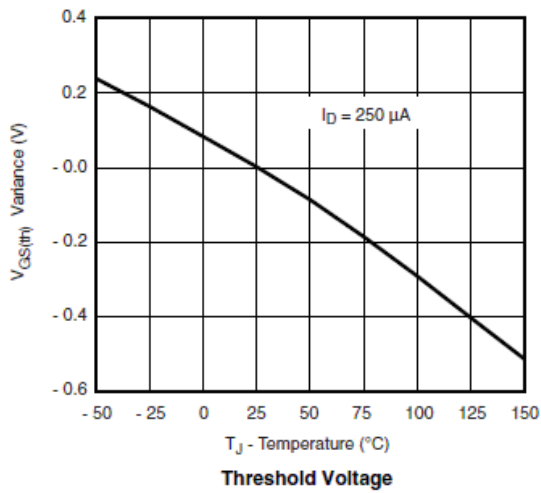
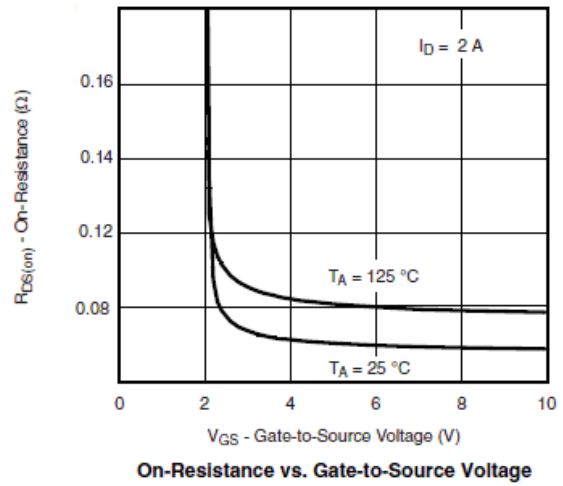
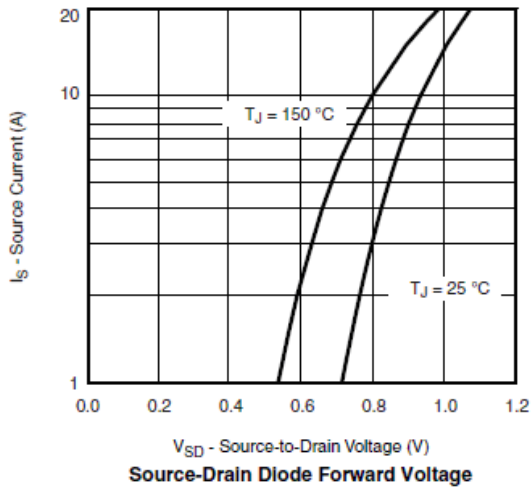
($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.0	
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=40V, V_{GS}=0V$			1	uA
		$V_{DS}=40V, V_{GS}=0V, T_J=85^{\circ}\text{C}$			10	
$I_{D(on)}$	On-State Drain Current	$V_{DS}\geq 5V, V_{GS}=10V$	10			A
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=2.6A$		58	68	m Ω
		$V_{GS}=4.5V, I_D=2.2A$		80	88	
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=2.0A$		16		S
V_{SD}	Diode Forward Voltage	$I_S=1.5A, V_{GS}=0V$		0.85	1.2	V
Dynamic						
C_{iss}	Input Capacitance	$V_{DS}=20V, V_{GS}=0V, f=1\text{MHz}$		650		pF
C_{oss}	Output Capacitance			75		
C_{rss}	Reverse Transfer Capacitance			45		
Q_g	Total Gate Charge	$V_{DS}=20V, V_{GS}=4.5V, I_D=2A$		10	15	nC
Q_{gs}	Gate-Source Charge			2		
Q_{gd}	Gate-Drain Charge			2.5		
$t_{d(on)}$	Turn-On Time	$V_{DD}=15V, R_L=15\Omega, I_D=1A, V_{GEN}=10V, R_G=6\Omega$		8	15	ns
t_r				12	20	
$t_{d(off)}$	Turn-Off Time			28	40	
t_f				8	15	

Typical Performance Characteristics



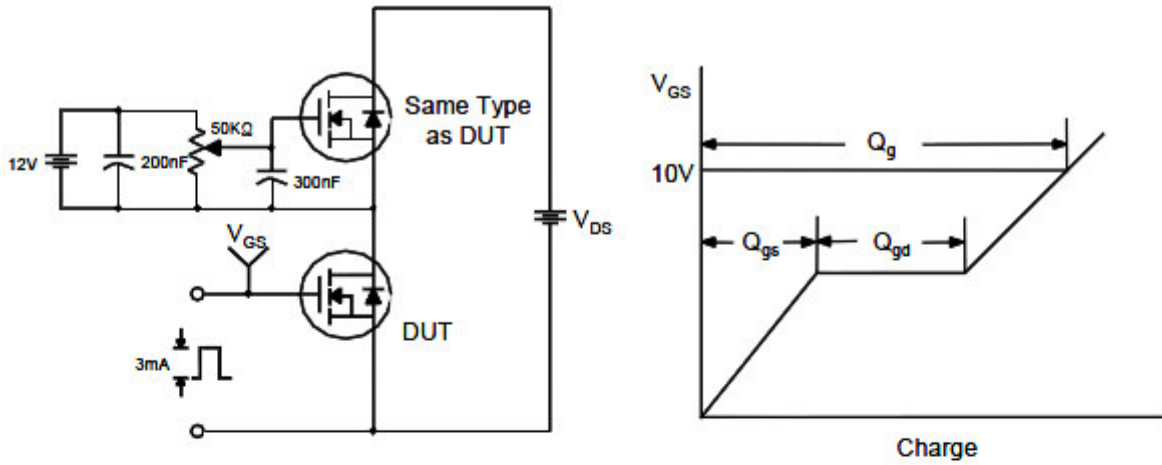
Typical Performance Characteristics (continue)



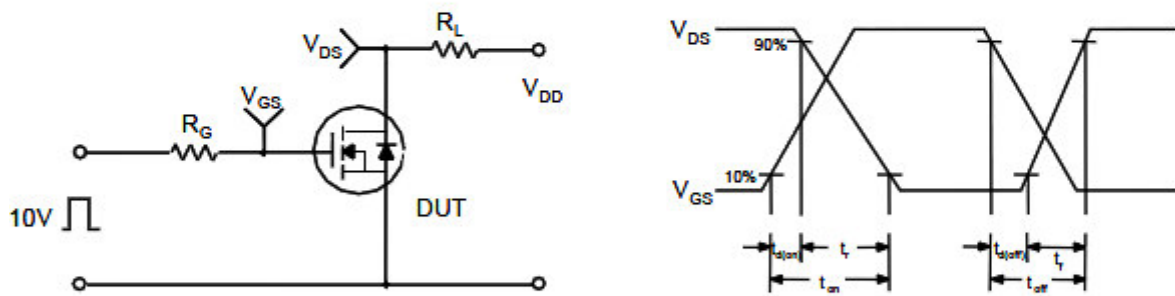
Normalized Thermal Transient Impedance, Junction-to-Foot

Typical Characteristics

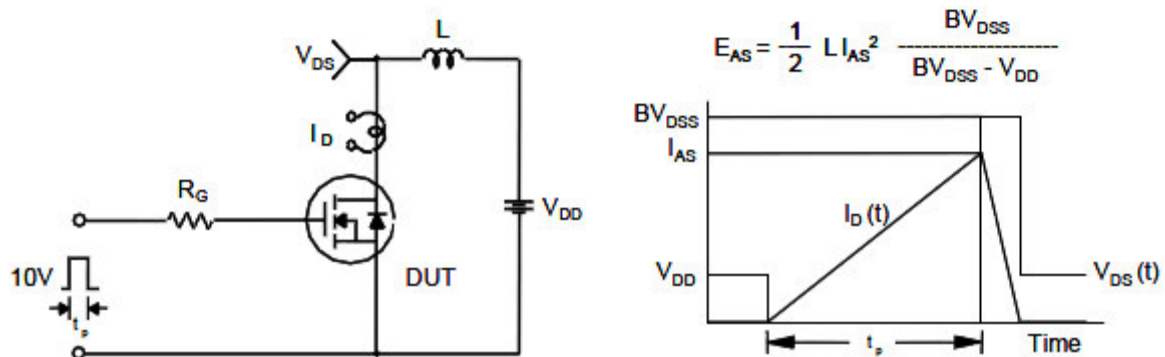
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

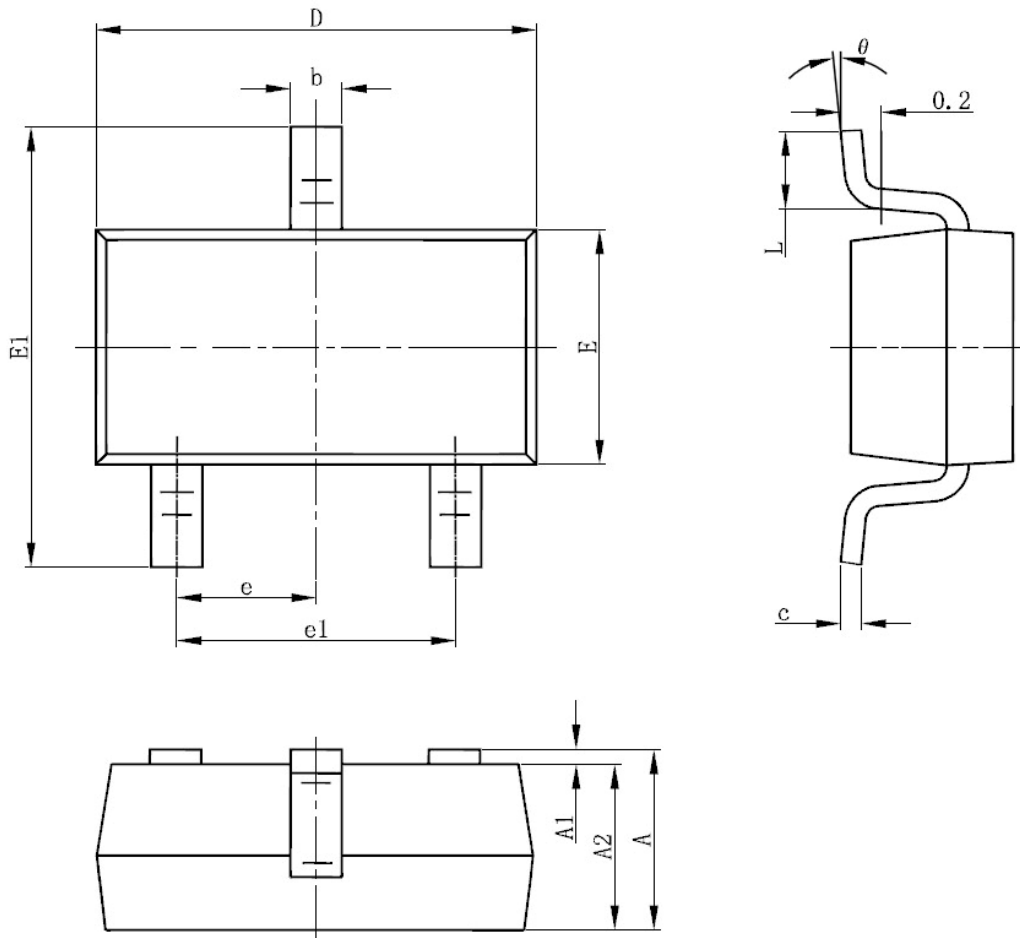


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-23-3L PLASTIC PACKAGE







Dimensions




SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.9	1.2	0.035	0.043
A1	0	0.1	0	0.004
A2	0.9	1.1	0.035	0.039
b	0.3	0.5	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.8	3	0.110	0.118
E	1.2	1.4	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950 (TYP)		0.037 (TYP)	
e1	1.8	2	0.071	0.079
L	0.55REF		0.022REF	
L1	0.3	0.5	0.012	0.020
Q	0°	8°	0°	6°



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