

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
50V	$3\Omega@10V$	0.22A
	$4\Omega@4.5V$	

Feature

- Advanced trench process technology
- High density cell design for ultra low on-resistance
- Suffix "-Q1" for AEC-Q101

Application

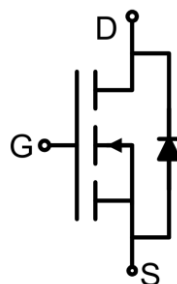
- Load Switch for Portable Devices
- DC/DC Converter
- Direct logic-level interface: TTL/CMOS

Package

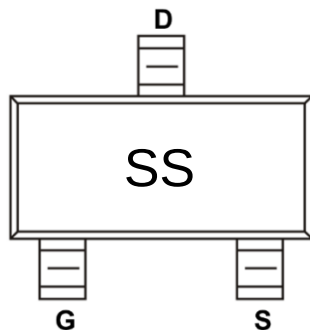


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.22	A
Pulsed Drain Current	I_{DM}	0.7	A
Power Dissipation	P_D	0.35	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Electrical characteristics (T_A=25 °C, unless otherwise noted)

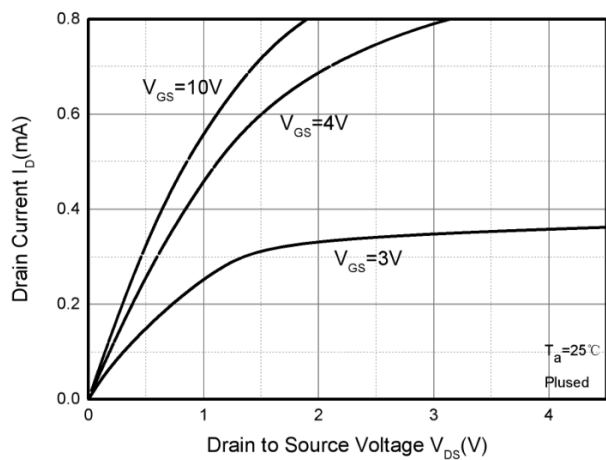
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	50			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 5	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.8		1.6	V
Drain-source on-resistance ¹⁾	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 0.5A$			3	Ω
		$V_{GS} = 4.5V, I_D = 0.2A$			4	
Dynamic characteristics ²⁾						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		27		pF
Output Capacitance	C_{oss}			13		
Reverse Transfer Capacitance	C_{rss}			6		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 25V, V_{GS} = 10V, I_D = 0.3A, R_{GEN} = 6\Omega$		5		nS
Rise time	t_r			18		
Turn-off delay time	$t_{d(off)}$			36		
Fall time	t_f			15		
Source-Drain Diode characteristics						
Diode Forward Current ¹⁾	I_S				0.22	A
Diode Forward voltage	V_{DS}	$V_{GS} = 0V, I_S = 0.5A$			1.4	V

Notes:

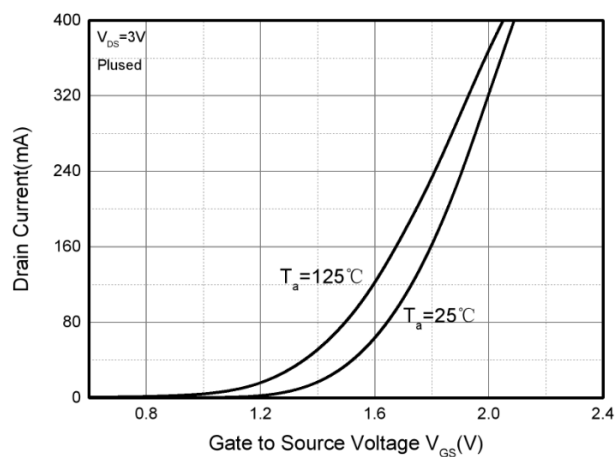
1) Pulse Test: Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.

2) Guaranteed by design, not subject to production testing.

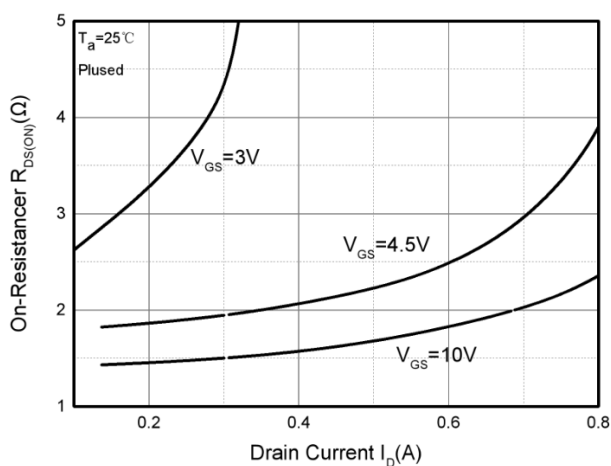
Test Circuits and Waveforms



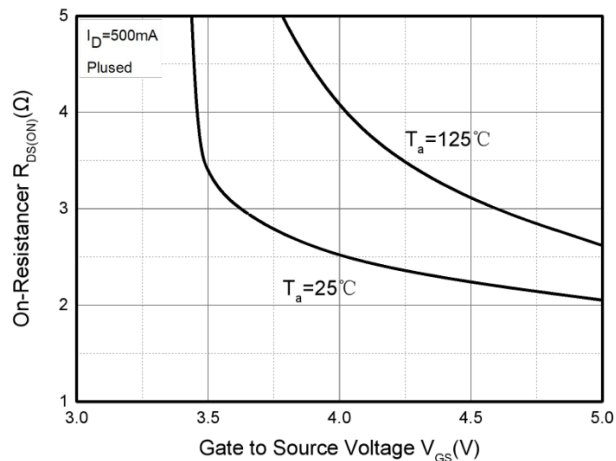
Output Characteristics



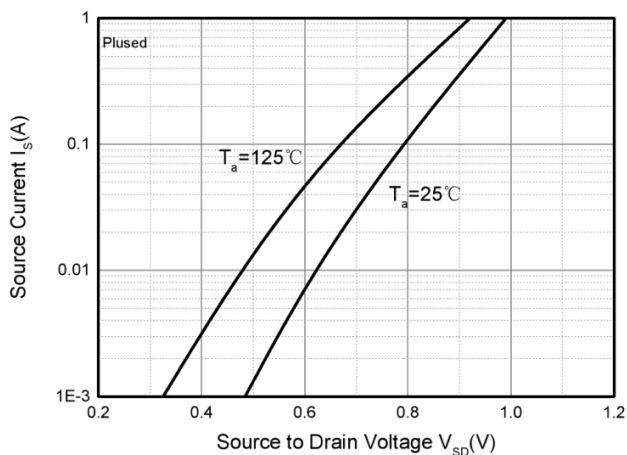
Transfer Characteristics



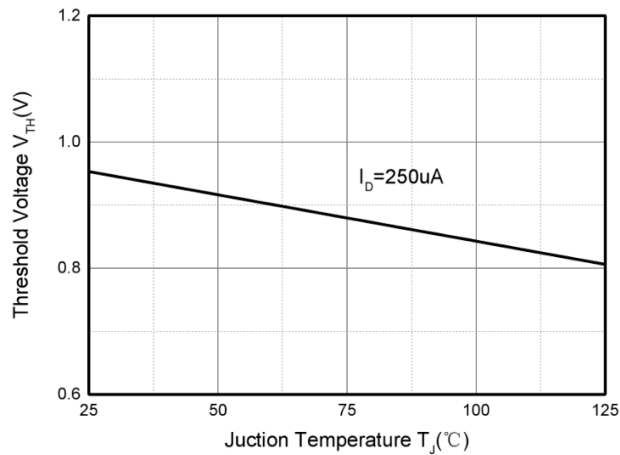
RDS(ON)— I_D



RDS(ON)— V_{GS}

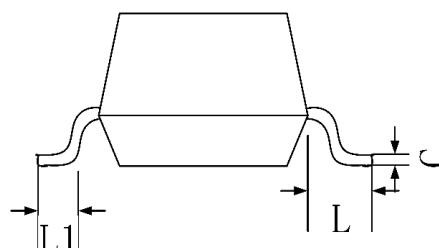
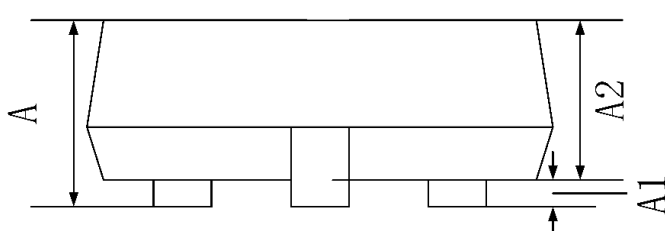
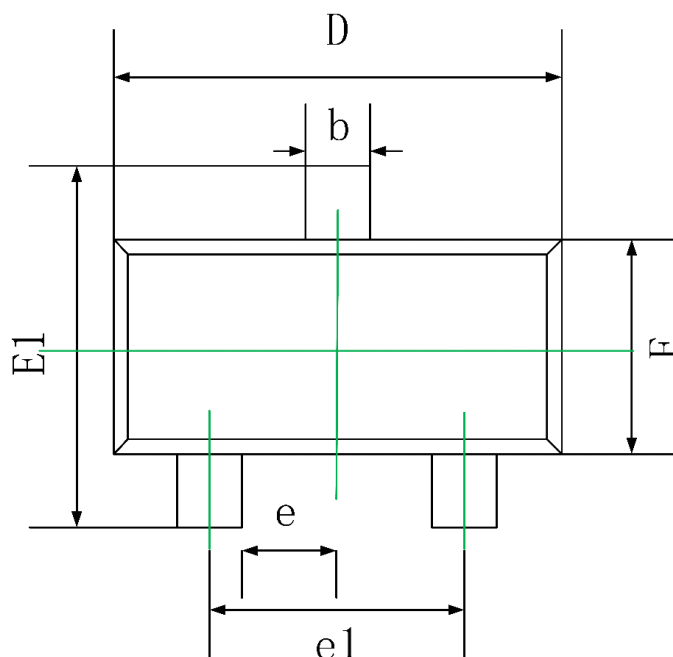


I_S — V_{SD}



Threshold Voltage

SOT-23 Package Information



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	0.200	0.003	0.008
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