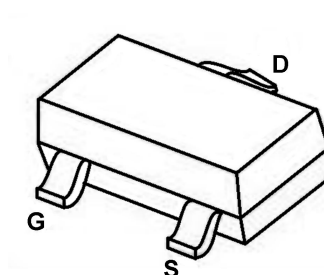


-20V P-Channel Mosfet

FEATURES

- $R_{DS(ON)} \leq 0.52\Omega$ (0.27 Ω Typ.)
@ $V_{GS}=-4.5V$
- $R_{DS(ON)} \leq 0.71\Omega$ (0.37 Ω Typ.)
@ $V_{GS}=-2.5V$
- $R_{DS(ON)} \leq 1.1\Omega$ (0.6 Ω Typ.)
@ $V_{GS}=-1.8V$

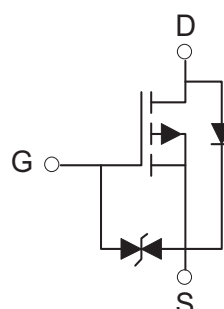
SOT-523



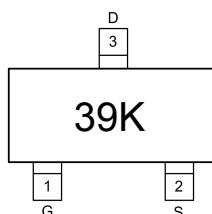
APPLICATIONS

- Load Switching
- Power Management in Note book
- Portable Equipment
- Battery Powered System

P-CHANNEL MOSFET



MARKING



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 6	V
I_D	Continuous Drain Current	-0.66	A
I_{DM}	Pulsed Drain Current	-1.2	A
P_D	Power Dissipation	0.15	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	$^{\circ}C/W$
T_J	Junction Temperature	150	$^{\circ}C$
T_{STG}	Storage Temperature	-55~ +150	$^{\circ}C$

MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = -250μA	-20	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -16V, V _{GS} = 0V, T _J = 25°C	-	-	-1	μA
I _{GSS}	Gate to Body Leakage Current	V _{GS} = ±4.5V, V _{DS} = 0V	-	-	±10	uA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	-0.45	-0.8	-1.2	V
R _{DS(on)}	Static Drain-Source On-Resistance ^{note1}	V _{GS} =-4.5V, I _D =-1A	-	0.27	0.52	Ω
		V _{GS} =-2.5V, I _D =-0.8A	-	0.37	0.71	
		V _{GS} =-1.8V, I _D =-0.5A	-	0.60	1.1	
Dynamic Characteristics ^{note2}						
C _{iSS}	Input Capacitance	V _{DS} =-16V, V _{GS} = 0V f = 1.0MHz	-	152	-	pF
C _{oSS}	Output Capacitance		-	18.5	-	pF
C _{rSS}	Reverse Transfer Capacitance		-	6	-	pF
Switching Characteristics ^{note2}						
t _{d(on)}	Turn-On Delay Time	V _{GS} =-5V, V _{DS} =-10V R _G =10Ω, I _D =-0.2A	-	51.3	-	ns
t _r	Turn-On Rise Time		-	24.2	-	ns
t _{d(off)}	Turn-Off Delay Time		-	246	-	ns
t _f	Turn-Off Fall Time		-	81.2	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S =-0.5A T _J = 25°C	-	-	-1.2	V

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

2. Guaranteed by design, not subject to production testing

Typical Performance Characteristics

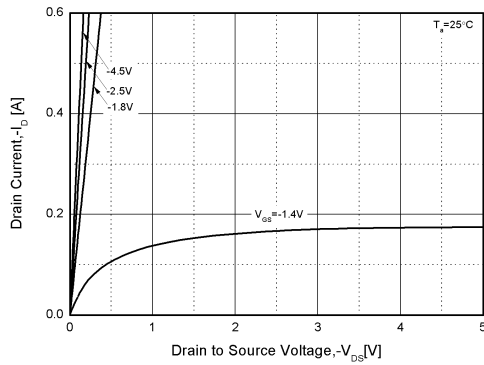


Figure1. Output Characteristics

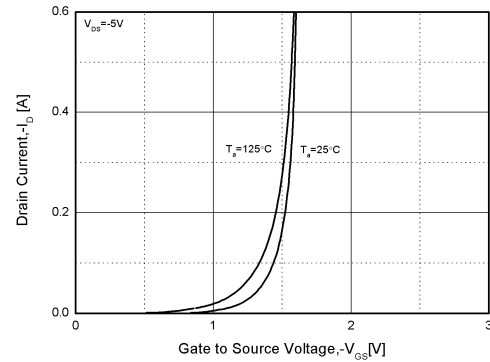


Figure2. Transfer Characteristics

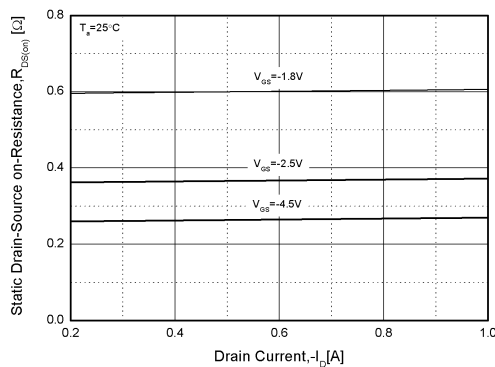


Figure3. Rdson-Drain Current

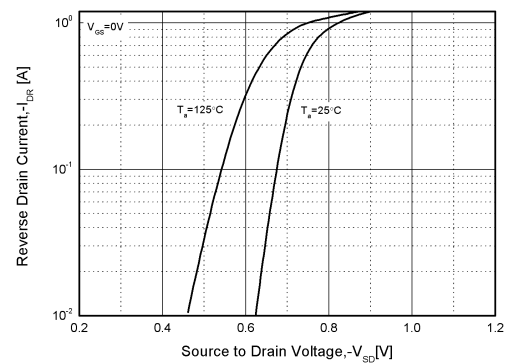


Figure4. Typical Source-Drain Diode Forward Voltage

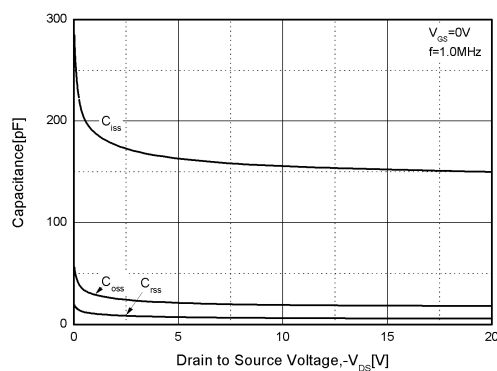


Figure5. Capacitance Characteristics

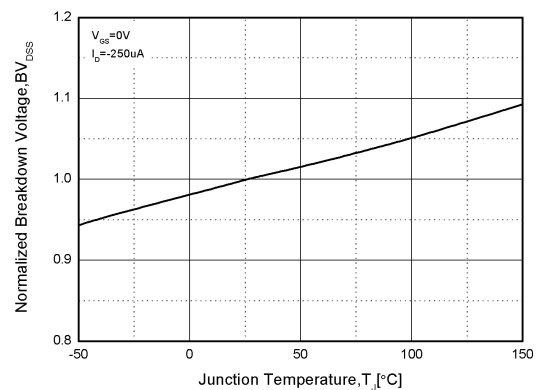


Figure6. Normalized Breakdown Voltage vs. Temperature

Typical Performance Characteristics (cont.)

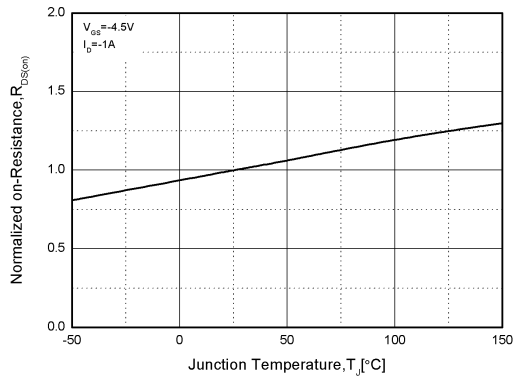


Figure7. Normalized on Resistance vs. Temperature

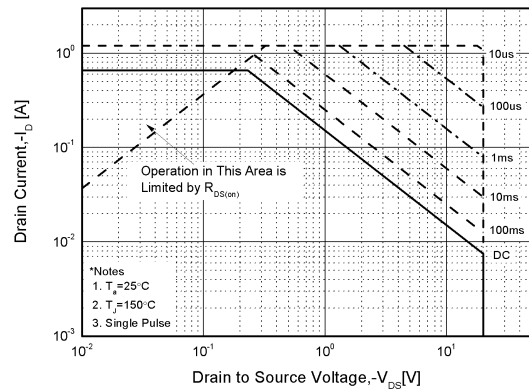


Figure8. Safe Operation Area

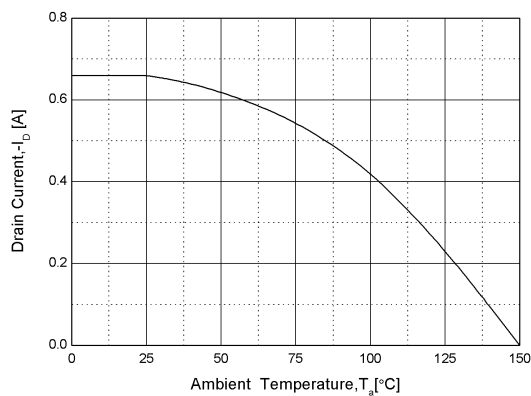


Figure9. Drain Current vs. Ambient Temperature

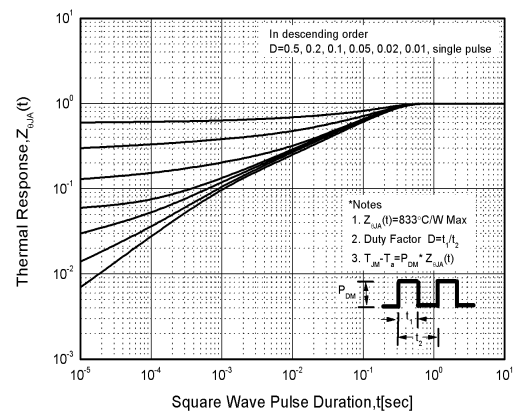
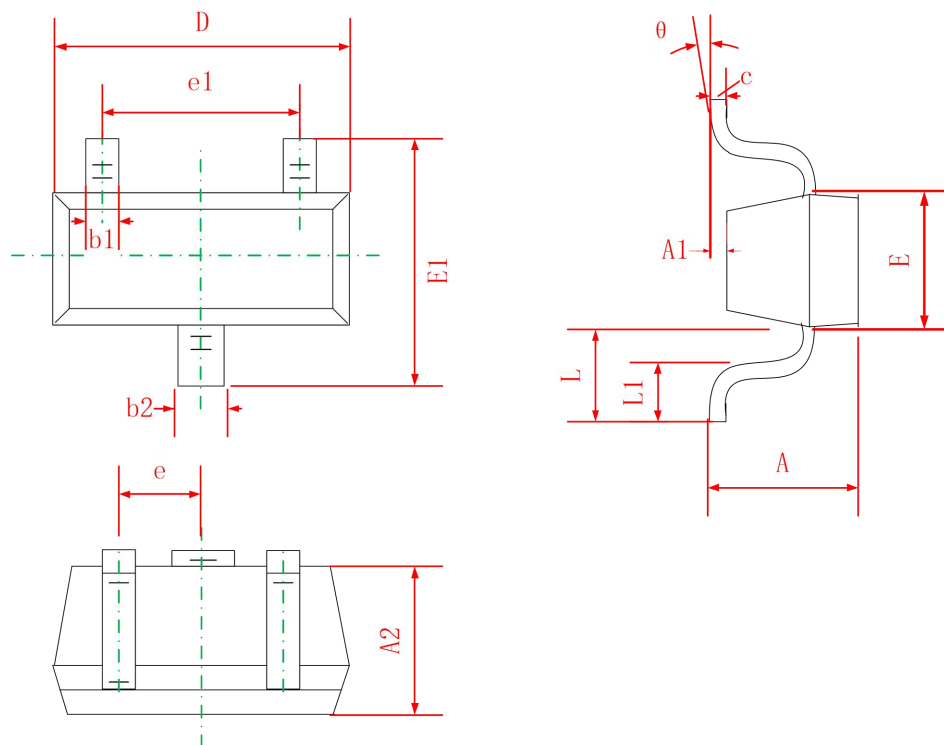


Figure10. Transient Thermal Response Curve

SOT-523 PACKAGE OUTLINE DRAWING



Symbol	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
θ	0°	8°

Unit: mm