-20V P-Channel Trench Power MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	350mΩ@-4.5V	-0.66A
	450mΩ@-2.5V	

Features

- Very Low On-resistance $R_{DS(ON)}$
- LowCrss
- Fast switching
- ESD Protected Up to 2.0KV (HBM)

Applications

- Interfacing, Logic switch
- Load switch
- Power management

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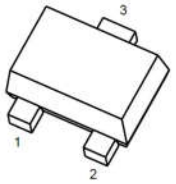
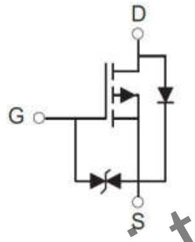
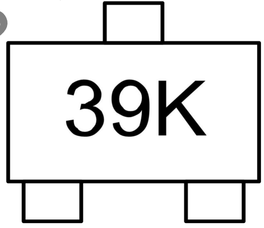


PIN1:GATE
PIN2:SOURCE
PIN3:DRAIN

Schematic diagram



Marking



Absolute Maximum rating（T_A = 25℃ unless otherwise noted）

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current	T_C = 25℃	I_D	-0.66	A
	T_C = 100℃		-0.4	A
Drain Current - Pulsed		I_{DM}	-2	A
Power Dissipation	T_C = 25℃	P_D	0.15	W
Thermal Resistance, Junction-to-Ambient		$R_{\theta JA}$	833	℃/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	℃

Electrical Characteristics（T_A = 25℃ unless otherwise noted）

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -20V, V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±10V, V_{DS} = 0V			±10	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-0.35	-0.65	-1	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS}= -4.5V, I_D=-0.5A		350	450	mΩ
		V_{GS}= -2.5V, I_D=-0.4A		450	600	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHZ		65		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			8		
Switching Characteristics						
Total Gate Charge	Q_g	V_{GS}=-4.5V,V_{DD}=-10V, I_D=-0.5A		1.15		nC
Gate-source Charge	Q_{gs}			0.37		
Gate-drain Charge	Q_{gd}			0.25		
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=-4.5V,V_{DD}=-10V,I_D=-0.5A, R_{GEN}=3Ω		4		ns
Turn-on Rise Time	t_r			19		
Turn-off Delay Time	$t_{d(off)}$			16		
Turn-off Fall Time	t_f			25		
Source - Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = -0.5A			-1.2	V
Reverse Recovery Charge	Q_{rr}	I_S =-0.5A,dI_F / dt = 100 A/us		0.97		ns
Peak Reverse Recovery Current	I_{rr}			26		nC

Dimension

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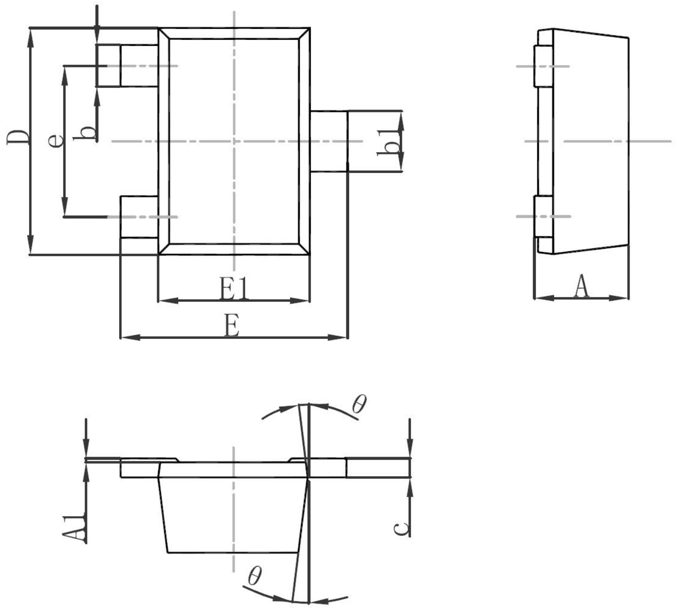
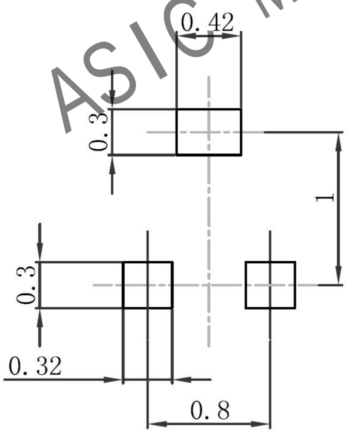


Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.500	0.015	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

Recommended Land Pattern



Note:

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