

FEATURES

- $R_{DS(ON)} < 140m\Omega @ V_{GS} = -2.5V$
- $R_{DS(ON)} < 110m\Omega @ V_{GS} = -4.5V$
- TrenchFET Power MOSFET

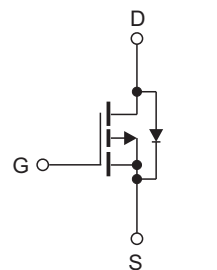
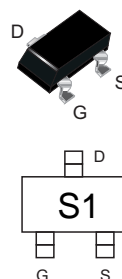


Product Summary			
V_{DS}	$R_{DS(on)} (m\Omega)$ Typ	$I_D (A)$	$Q_g (Typ)$
-20V	89 @ -2.5V	-2	3.3nc
	64 @ -4.5V	-3	

MECHANICAL DATA

- Case: SOT-23(TO-236)
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Mounting Position: Any
- Marking: S1

SOT-23



P-channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameters	Symbol	Value	Unit
Drain-Source voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-2.3	A
Maximum Power Dissipation @ $T_A = 25^\circ C$	P_D	1	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

Thermal Resistance Ratings

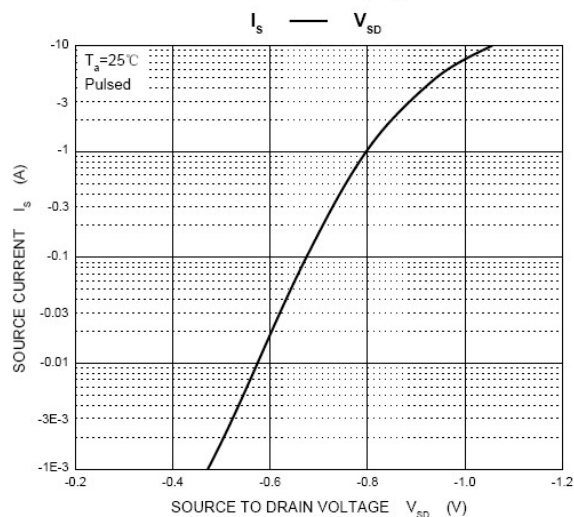
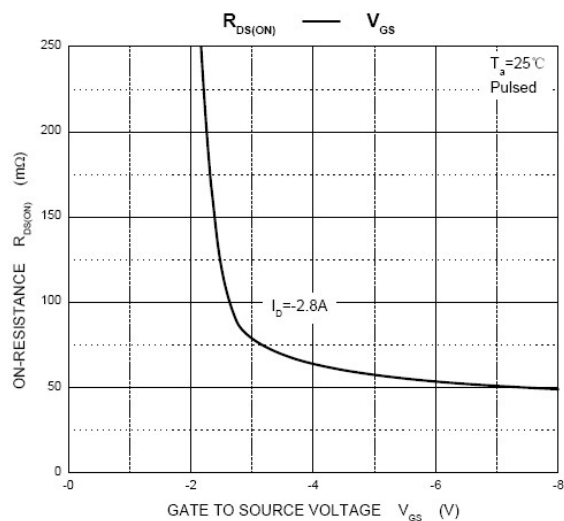
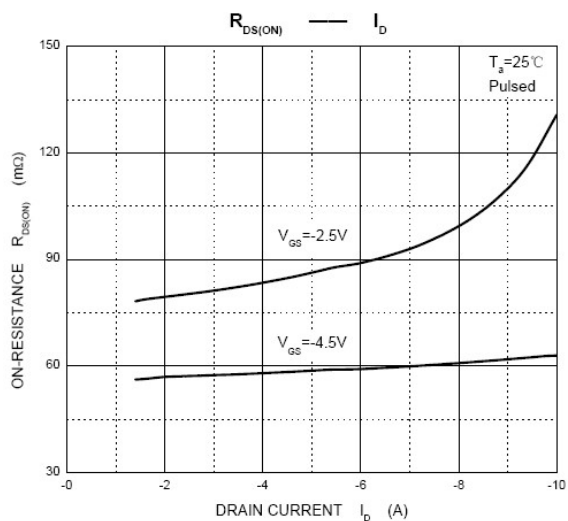
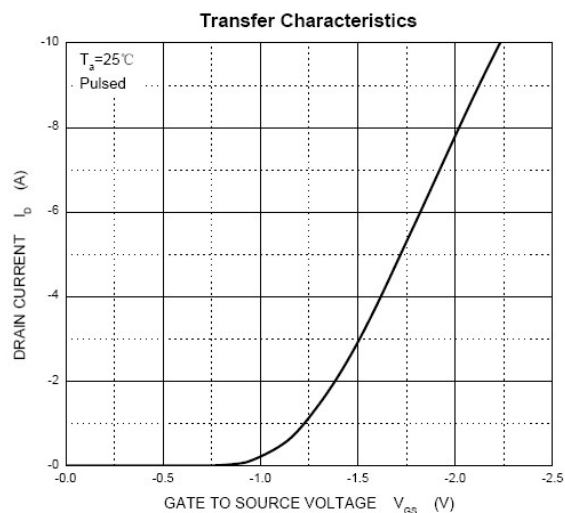
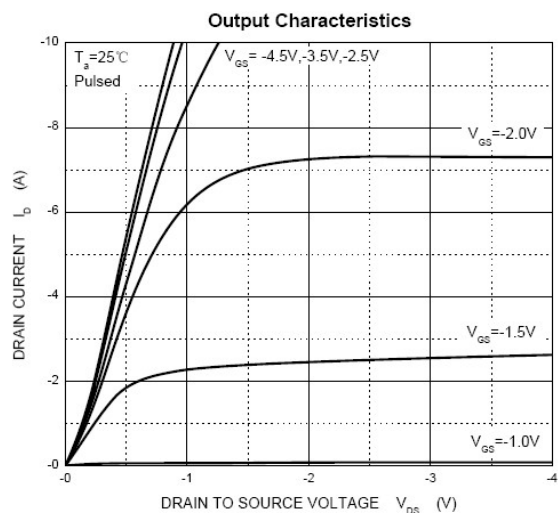
Parameters	Symbol	Typ	Max	Unit
Junction to Ambient, Steady State ²⁾	$R_{\theta JA}$	-	104	$^\circ C/W$

2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Electrical Characteristics (T_J=25°C unless otherwise noted)

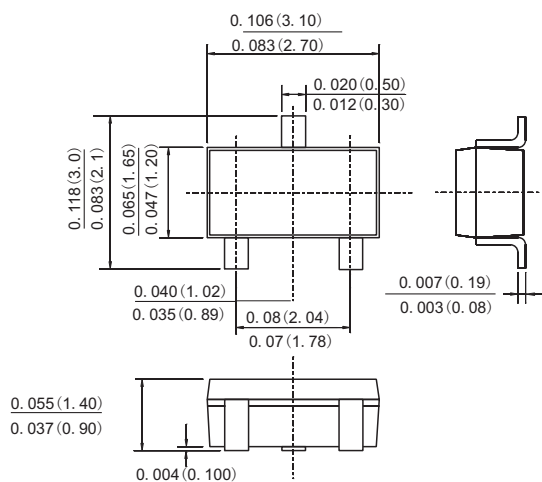
Parameters	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _C =25°C	-	-	-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = 12V, V _{DS} =0V	-	-	100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-0.4	-0.7	-1	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D =-3A	-	64	110	mΩ
		V _{GS} = -2.5V, I _D =-2A	-	89	140	
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz	-	405	-	pF
Output Capacitance	C _{oss}		-	75	-	
Reverse Transfer Capacitance	C _{rss}		-	55	-	
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-2.5V, I _D =-3A	-	3.3	12	nC
Gate-Source Charge	Q _{gs}		-	0.7	-	
Gate-Drain Charge	Q _{gd}		-	1.3	-	
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V, V _{DD} =-10V, I _D =-1A, R _{GEN} =10Ω	-	11	-	ns
Turn-On Rise Time	t _r		-	35	-	
Turn-off Delay Time	t _{D(off)}		-	30	-	
Turn-Off Fall Time	t _f		-	10	-	
Drain-Source Body Diode Characteristics						
Maximum Body-Diode Continuous Current	I _S		-	-	-1.3	A
Diode Forward Voltage	V _{SD}	I _S =-1.3A, V _{GS} =0V	-	-	-1.2	V

Typical characteristics

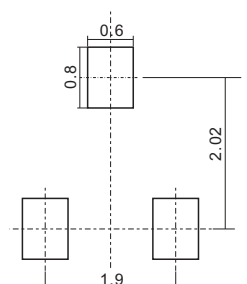


PACKAGE OUTLINE DIMENSIONS

SOT-23



Suggested Pad Layout



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