P-Channel Enhancement MOSFET

Features

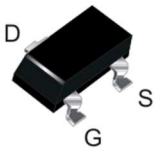
- TrenchFET Power MOSFET
- Halogen-Free & Lead-Free

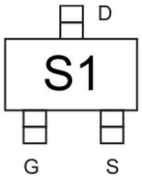
Product Summary			
V_{DS}	$R_{DS(on)}$ (mΩ) Typ	I_D (A)	Qg (Typ)
-20V	89 @- 2. 5V	-2	3. 3nc
	64 @ -4.5V	-3	

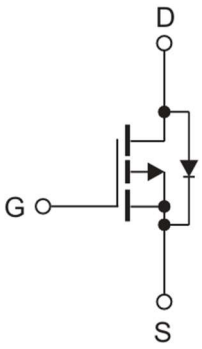
Application

- Load Switch for Portable Devices
- Voltage controlled small signal switch

SOT-23







P-channel MOSFET

Absolute Maximum Ratings (at T_A = 25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current	T_J = 150℃	I_D	-2.3	A
Power Dissipation	T_A = 25℃	P_D	1	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55~150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient [1)]	$R_{\theta JA}$	104	℃/W

Note：

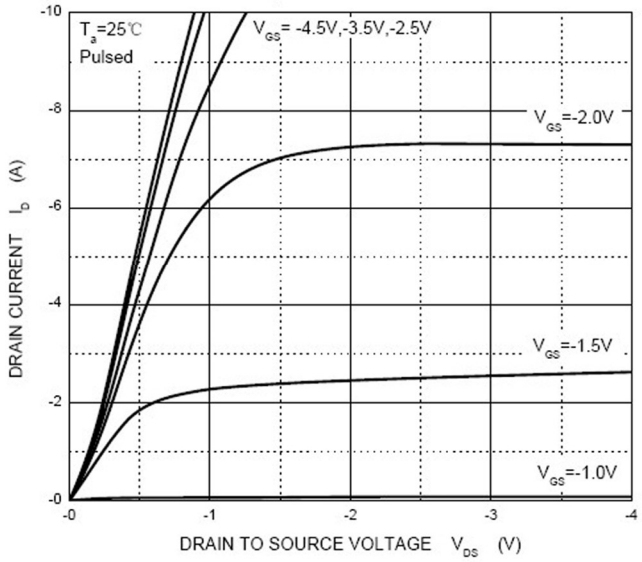
1) Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Characteristics at T_J = 25°C unless otherwise specified

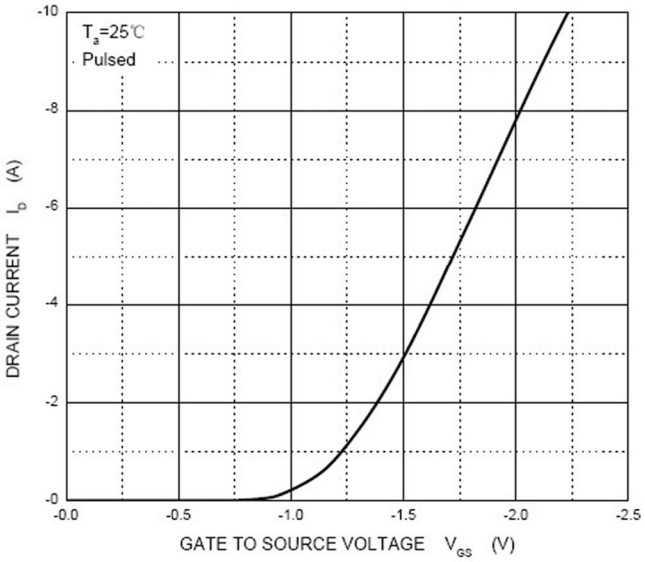
Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at V_{GS}=0V, I_D=-250μA	BV_{DSS}	-20			V
Drain-Source Leakage Current at V_{DS}=-20V, V_{GS}=0V	I_{DSS}			-1	μA
Gate Leakage Current at V_{GS}=±12V, V_{DS}=0V	I_{GSS}			±0.1	μA
Gate-Source Threshold Voltage at V_{DS}=V_{GS}, I_D=-250μA	$V_{GS(th)}$	-0.4	-0.7	-1.0	V
Drain-Source On-State Resistance at V_{GS} = -4.5V, I_D = -3A at V_{GS} = -2.5V, I_D = -2A	$R_{DS(on)}$		64 89	110 140	mΩ
DYNAMIC PARAMETERS					
Input Capacitance at V_{GS}=0V, V_{DS}=-10V, f=1MHz	C_{iss}		405		pF
Output Capacitance at V_{GS}=0V, V_{DS}=-10V, f=1MHz	C_{oss}		75		
Reverse Transfer Capacitance at V_{GS}=0V, V_{DS}=-10V, f=1MHz	C_{rss}		55		
Gate charge total at V_{DS}=-10V, V_{GS}=-2.5V, I_D=-3A	Q_g		3.3		nC
Gate to Source Charge at V_{DS}=-10V, V_{GS}=-2.5V, I_D=-3A	Q_{gs}		0.7		
Gate to Drain Charge at V_{DS}=-10V, V_{GS}=-2.5V, I_D=-3A	Q_{gd}		1.3		
Turn-On Delay Time at V_{DD}=-10V, V_{GS}=-4.5V, R_{GEN}=10Ω, I_D=-1A	$t_{d(on)}$		11		nS
Turn-On Rise Time at V_{DD}=-10V, V_{GS}=-4.5V, R_{GEN}=10Ω, I_D=-1A	t_r		35		
Turn-Off Delay Time at V_{DD}=-10V, V_{GS}=-4.5V, R_{GEN}=10Ω, I_D=-1A	$t_{d(off)}$		30		
Turn-Off Fall Time at V_{DD}=-10V, V_{GS}=-4.5V, R_{GEN}=10Ω, I_D=-1A	t_f		10		
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at I_S=-1.3A, V_{GS}=0V	V_{SD}			-1.2	V
Maximum Body-Diode Continuous Current	I_S			-1.3	A

Electrical Characteristics Curves

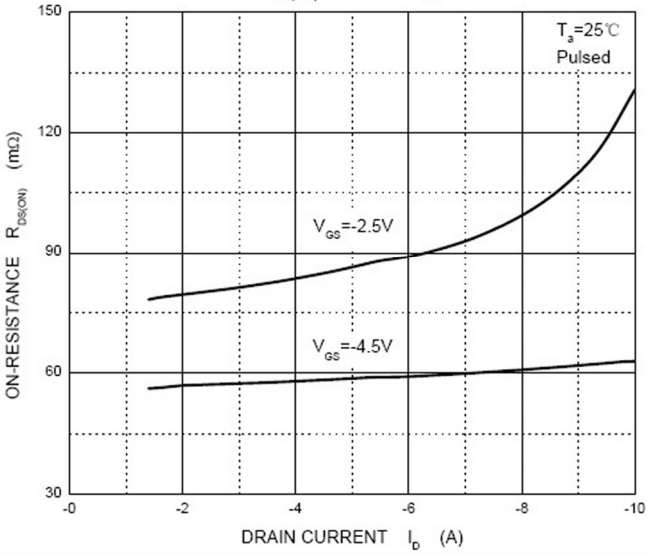
Output Characteristics



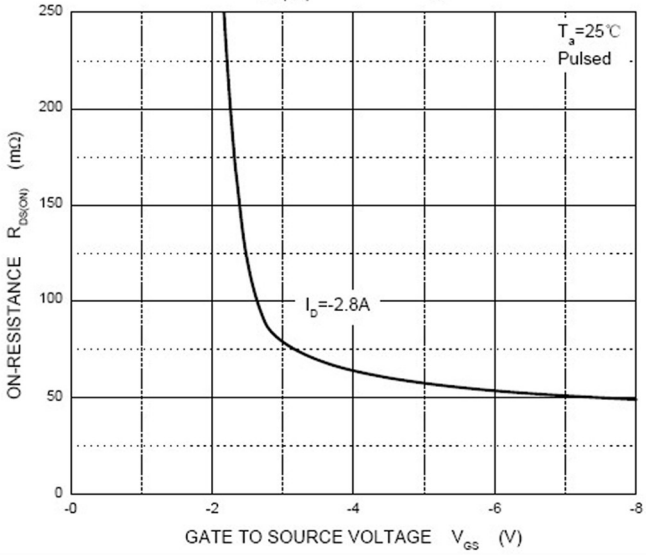
Transfer Characteristics



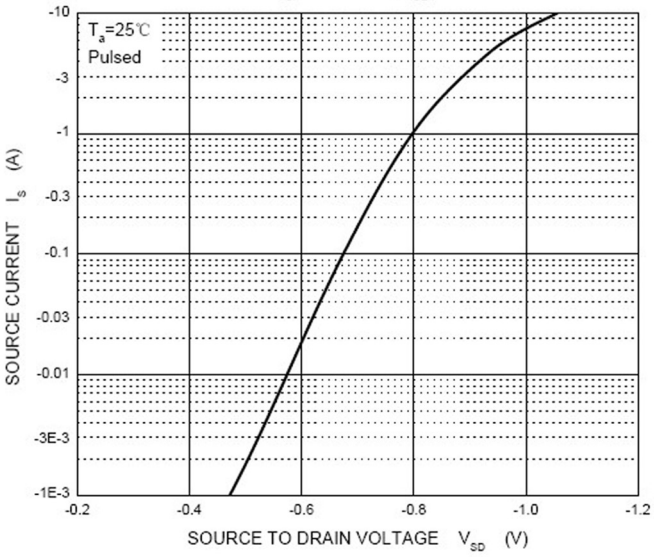
RDS(ON) — ID



RDS(ON) — VGS



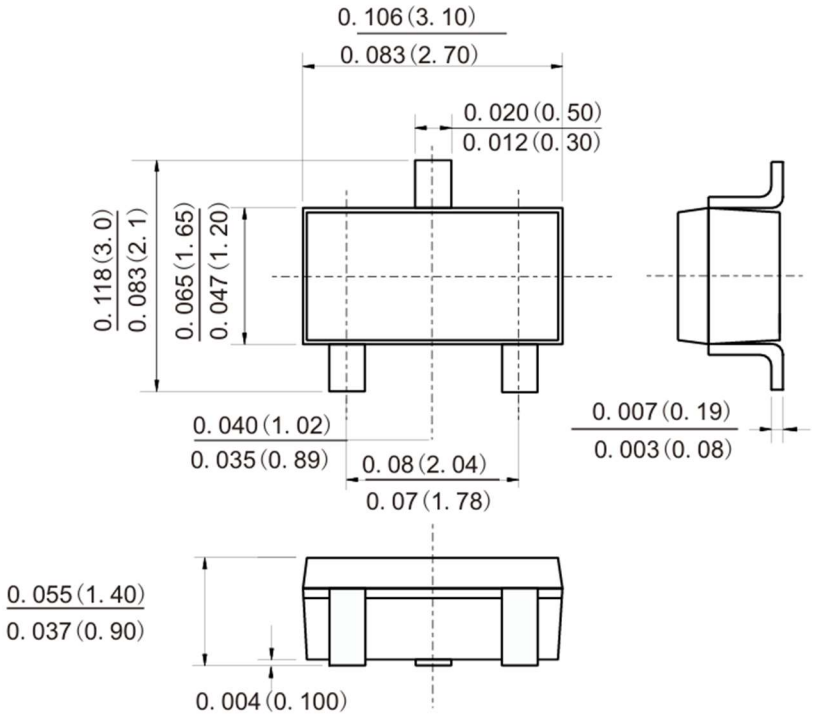
IS — VSD



Order Information

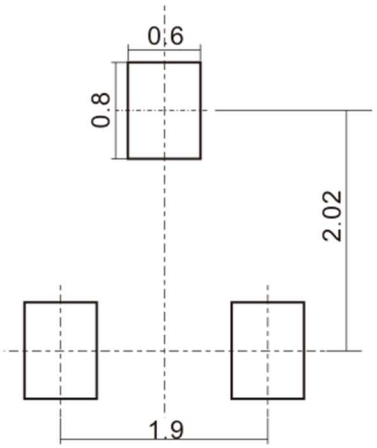
Part Number	Package	Quantity
Sh2301	SOT-23	3000

Package Outline Dimensions (Units: mm) SOT-23



Dimensions in inches and (millimetrers)

Suggested Pad Layout



Dimensions in millimetrers