

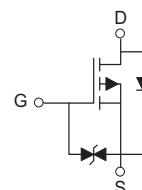
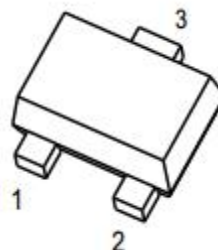
P Channel Advanced Power MOSFET

Features

- Lead Free Product is Acquired
- Surface Mount Package
- P-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- *HMB ESD Protection 2KV*

Applications

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

SOT-723

MARKING: X1
Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Typical Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current (note 1)	I_D	-0.66	A
Pulsed Drain Current ($t_p=10 \mu s$)	I_{DM}	-1.2	A
Power Dissipation (note 1)	P_D	350	mW
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}C$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^{\circ}C$

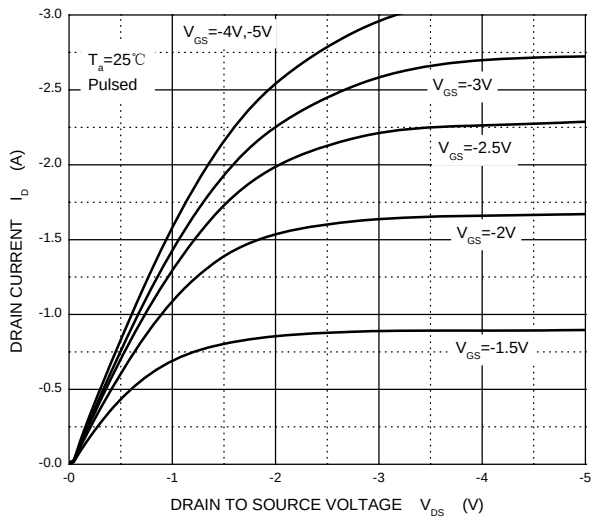
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-20V,V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±20	μA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	-0.45	-1.1	V
Drain-source on-resistance (note 2)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1A		430	520	mΩ
		V _{GS} =-2.5V, I _D =-0.8A		624	700	mΩ
		V _{GS} =-1.8V, I _D =-0.5A		950		mΩ
Forward transconductance (note 2)	g _{FS}	V _{DS} =-10V, I _D =-0.54A		1.2		S
Diode forward voltage	V _{SD}	I _S =-0.5A, V _{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input capacitance	C _{iss}	V _{DS} =-16V,V _{GS} =0V,f =1MHz		113	170	pF
Output capacitance	C _{oss}			15	25	pF
Reverse transfer capacitance	C _{rss}			9	15	pF
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time (note 3)	t _{d(on)}	V _{GS} =-4.5V,V _{DS} =-10V, I _D =-200mA,R _{GEN} =10Ω		9		ns
Turn-on rise time (note 3)	t _r			5.8		ns
Turn-off delay time (note3)	t _{d(off)}			32.7		ns
Turn-off fall time (note 3)	t _f			20.3		ns

Notes :

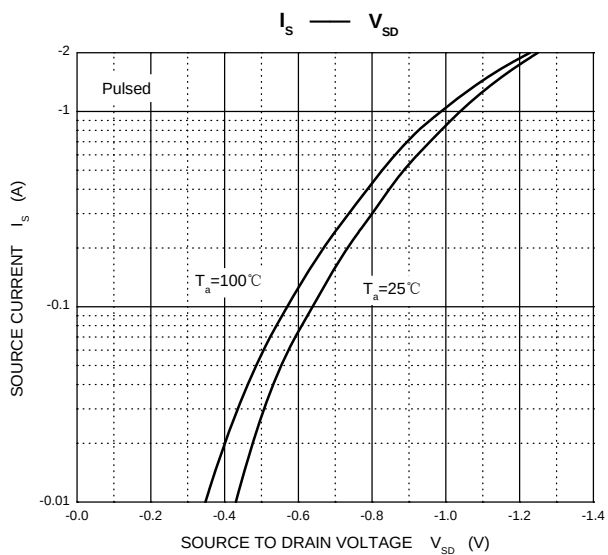
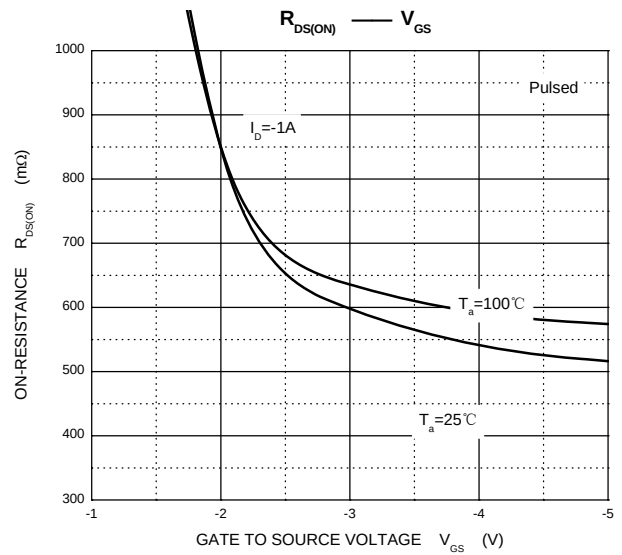
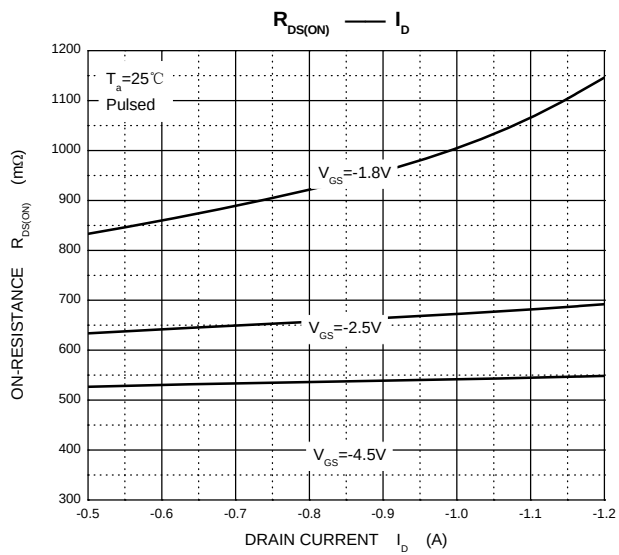
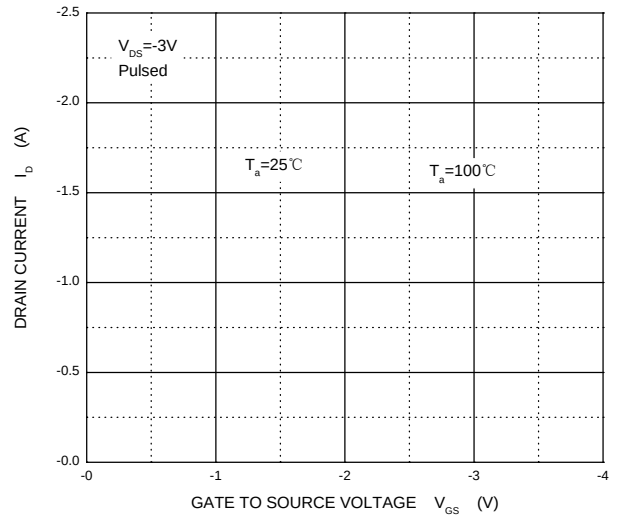
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300 μs , Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

Typical Characteristics

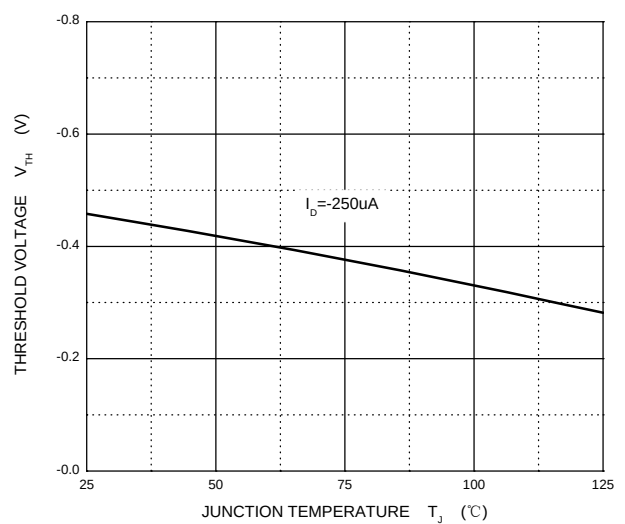
Output Characteristics

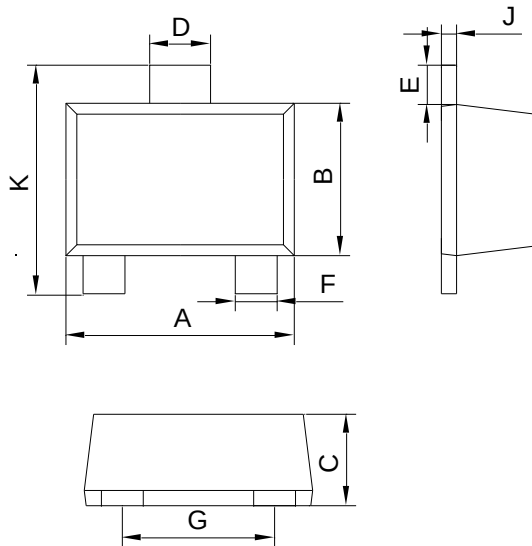


Transfer Characteristics



Threshold Voltage





SOT-723		
Dim	Min	Max
A	1.10	1.30
B	0.70	0.90
C	0.40	0.54
D	0.22	0.42
E	0.10	0.30
F	0.12	0.32
G	0.70	0.90
J	0.08	0.15
K	1.10	1.30

