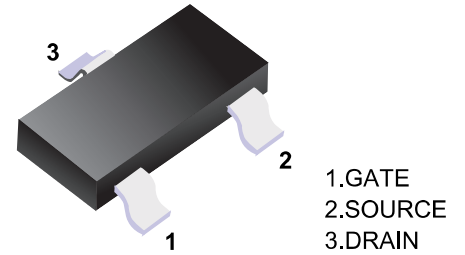


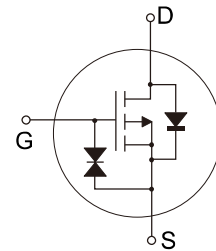
■ P-Channel MOSFET

■ Features

- Energy efficient
- Low threshold voltage
- High-speed switching
- Miniature surface mount package saves board space
- ESD protected(HBM) up to 2KV



■ Simplified outline(SOT-23)



■ MARKING

Marking	PD
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■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$-V_{DS}$	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$-I_D$	0.13	A
Pulsed Drain Current ^{Note1} @tp < 10μs	$-I_{DM}$	0.52	
Power Dissipation	P_D	225	mW
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	°C
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	556	°C/W

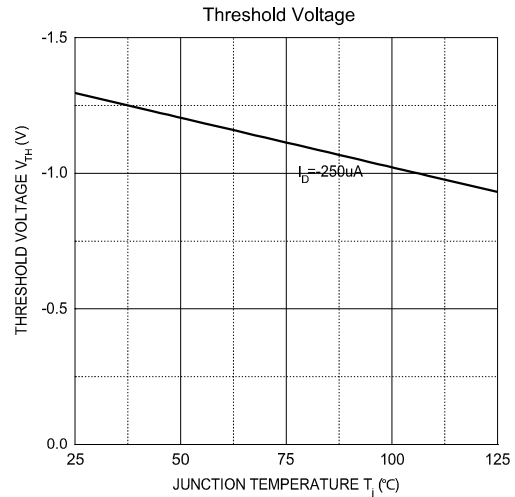
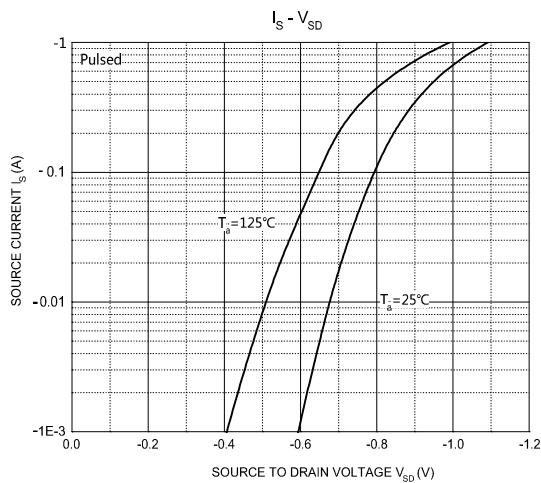
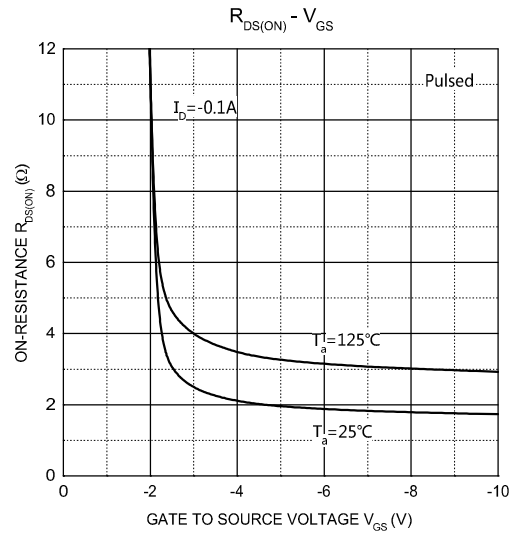
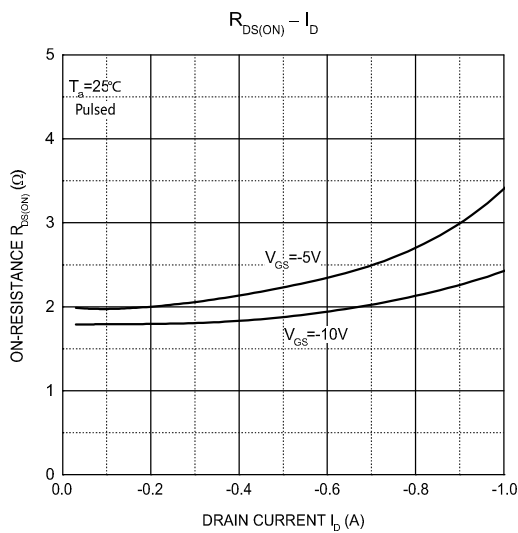
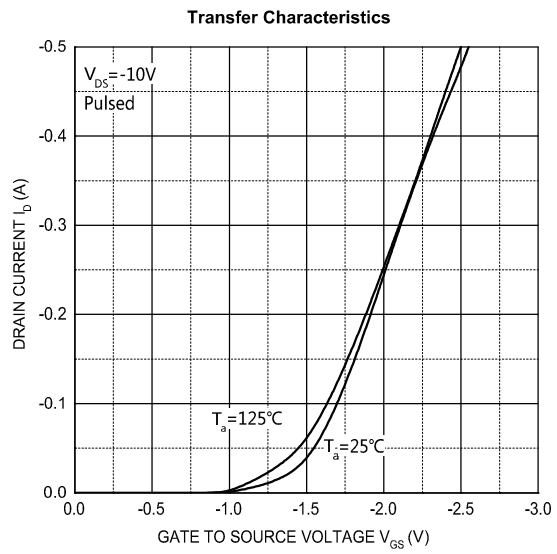
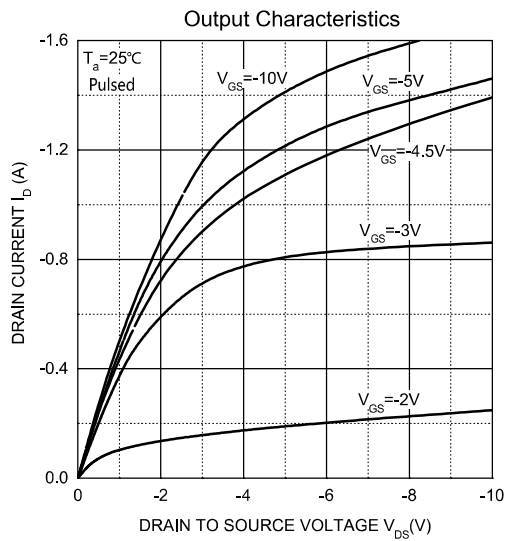
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	-BV _{DSS}	-I _D =250μA, V _{GS} =0V	50	—	—	V
Zero Gate Voltage Drain Current	-I _{DSS}	-V _{DS} =50V, V _{GS} =0V	—	—	1	μA
		-V _{DS} =25V, V _{GS} =0V	—	—	0.1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	—	1	5	μA
Gate Threshold Voltage ^{Note3}	-V _{GS(th)}	V _{DS} =V _{GS} , -I _D =250μA	0.9	1.3	2	V
Static Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	-V _{GS} =10V, -I _D =0.1A	—	1.7	8	Ω
		-V _{GS} =5V, -I _D =0.1A	—	1.9	10	Ω
Body Diode Forward Voltage	-V _{SD}	-I _S =0.13A, V _{GS} =0V	—	—	1.2	V
Dynamic Parameters						
Forward Transconductance ^{Note3}	g _{FS}	-V _{DS} =25V, -I _D =0.1A	50	—	—	mS
Input Capacitance	C _{iSS}	V _{GS} =0V, -V _{DS} =5V, f=1MHz	—	30	—	pF
Output Capacitance	C _{oss}		—	10	—	pF
Reverse Transfer Capacitance	C _{rSS}		—	5	—	pF
Switching Parameters						
Turn-On DelayTime	t _{D(on)}	-V _{DD} =15V, R _L =50Ω, -I _D =2.5A	—	2.5	—	ns
Turn-On Rise Time	t _r		—	1	—	ns
Turn-Off DelayTime	t _{D(off)}		—	16	—	ns
Turn-Off Fall Time	t _f		—	8	—	ns
Source-Drain Diode characteristics						
Diode forward current	-I _S		—	—	0.13	A
Diode pulsed forward current	-I _{SM}		—	—	0.52	A

Notes: 1. Repetitive rating : Pulse width limited by junction temperature.

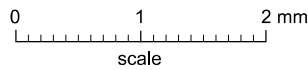
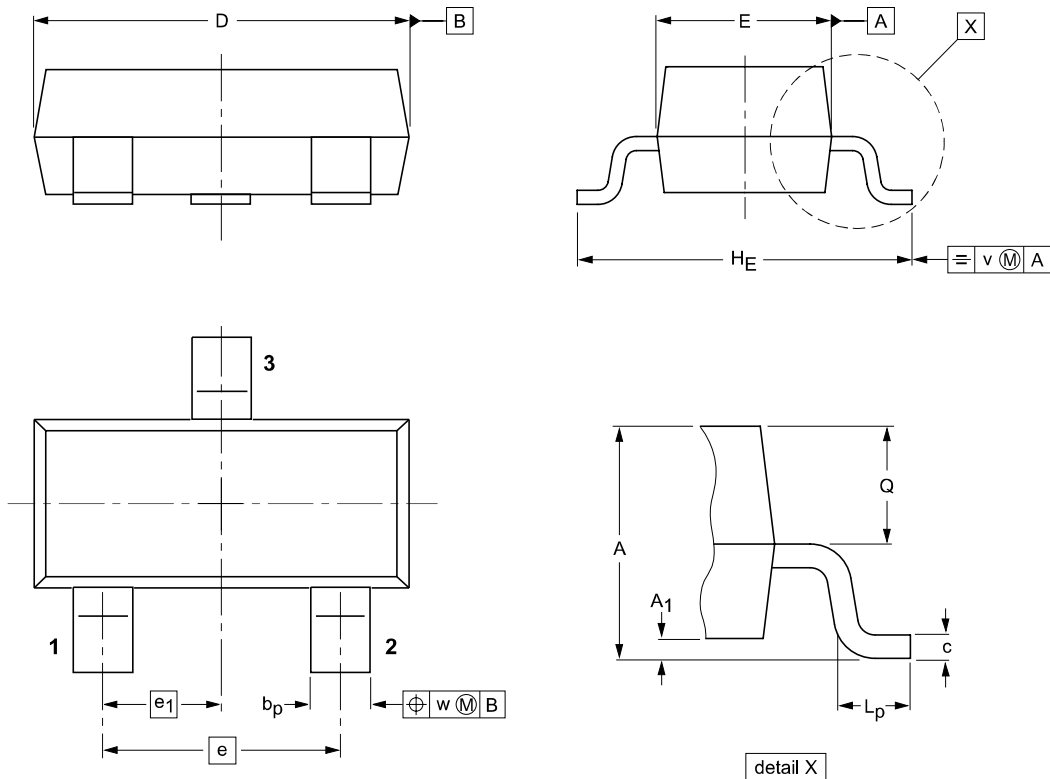
2. Surface mounted on FR4 board , t≤10s.

3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.



Package Outline

SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1