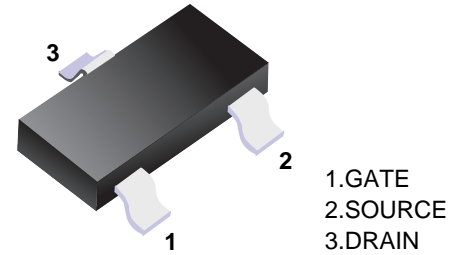
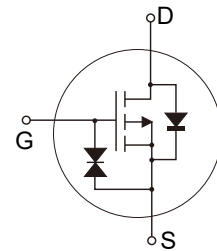


■ P-Channel MOSFET



■ Simplified outline(SOT-23)



■ Features

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

■ 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	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$-I_D$	0.13	A
Pulsed Drain Current <sup>Note1</sup> @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
<b>Thermal Characteristics</b>			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient <sup>Note2</sup>	$R_{\theta JA}$	556	°C/W

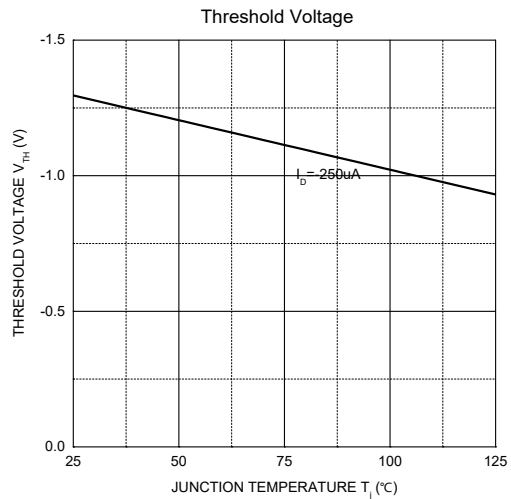
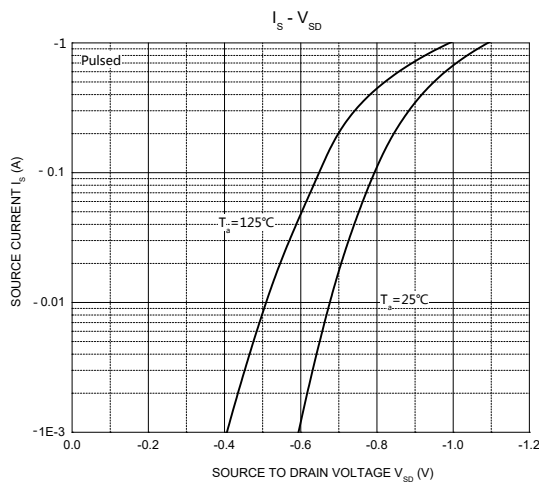
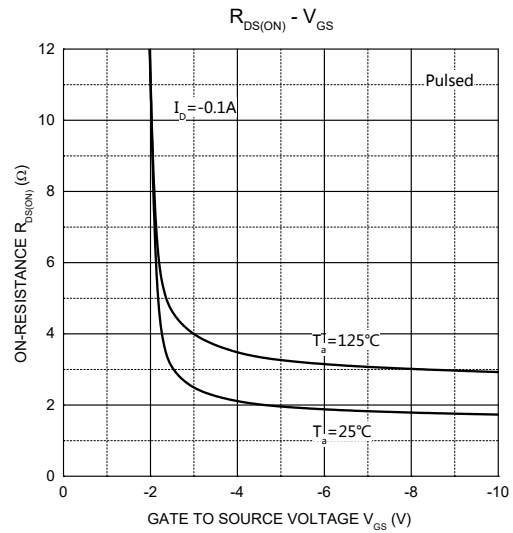
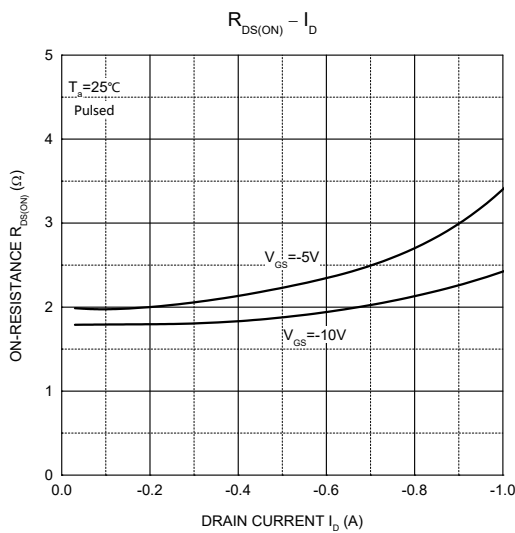
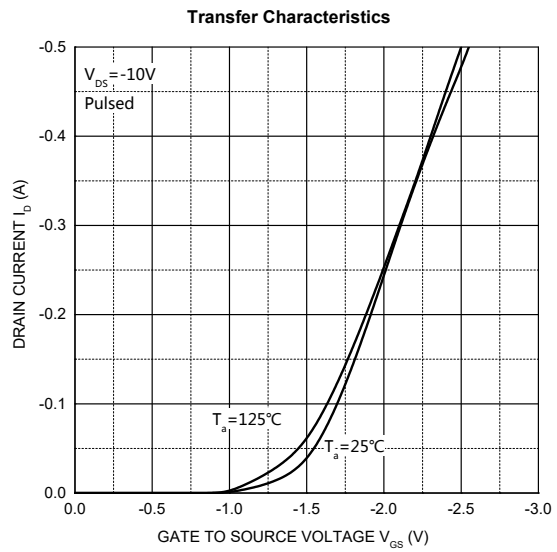
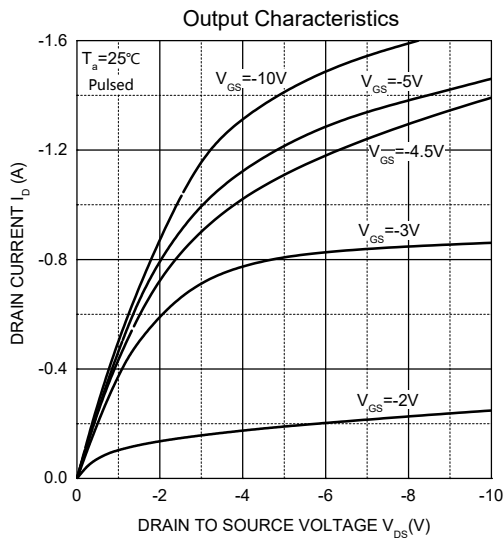
**■ Electrical Characteristics Ta = 25°C**

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

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

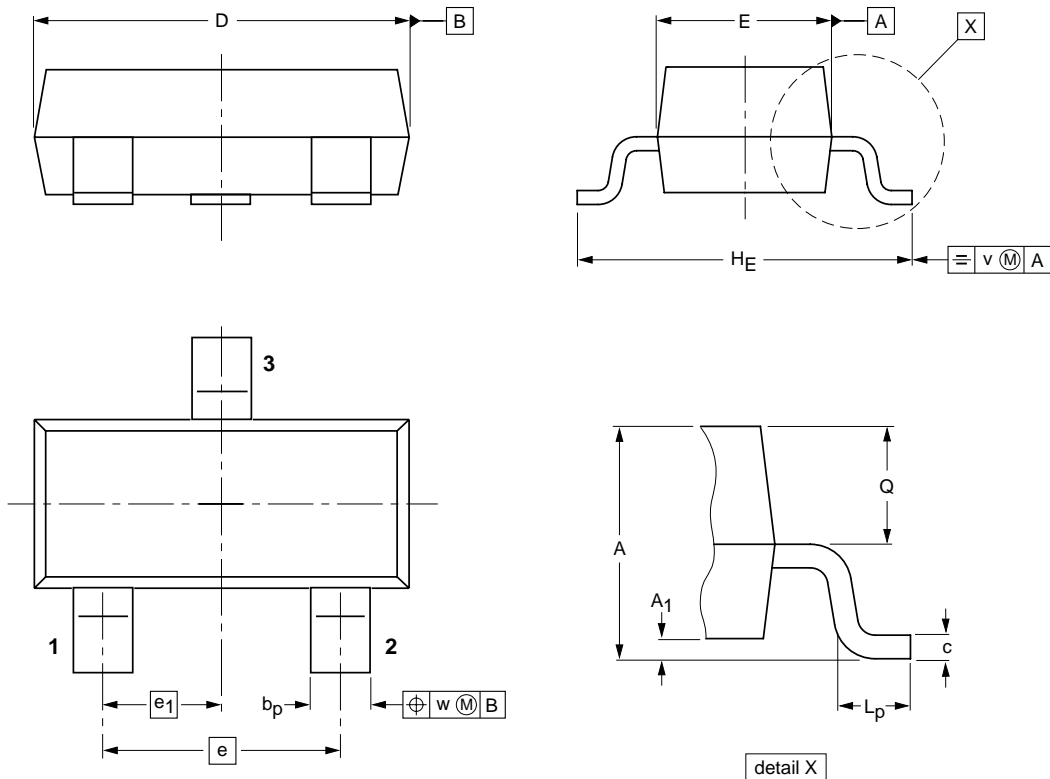
2. Surface mounted on FR4 board , t≤10s.

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



**Package Outline**

**SOT-23**



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

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