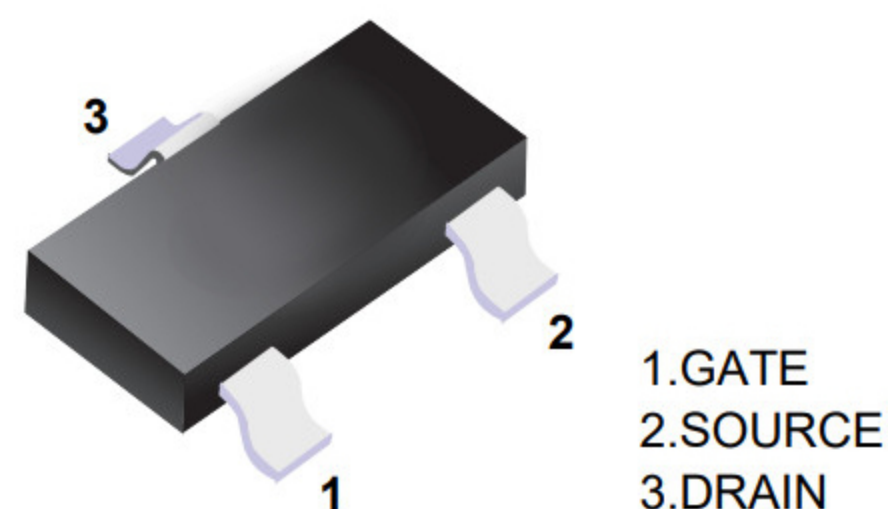


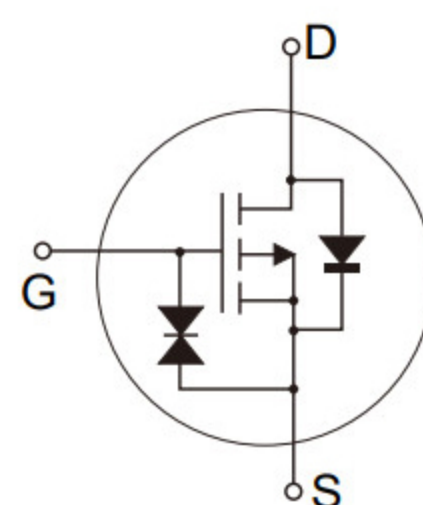
■ P-Channel MOSFET

■ 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)



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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} @ $t_p < 10\mu\text{s}$	$-I_{DM}$	0.52	
Power Dissipation	P_D	225	mW
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	$^\circ\text{C}$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	556	$^\circ\text{C/W}$

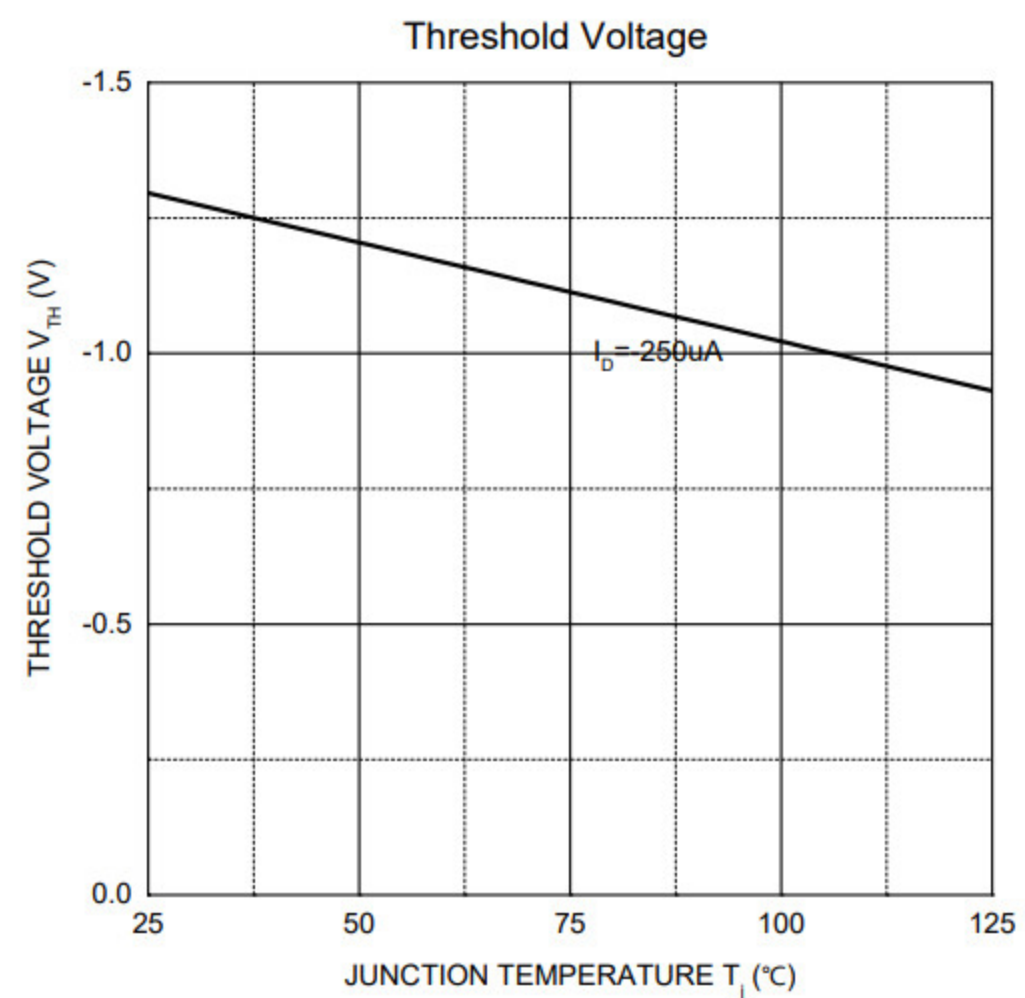
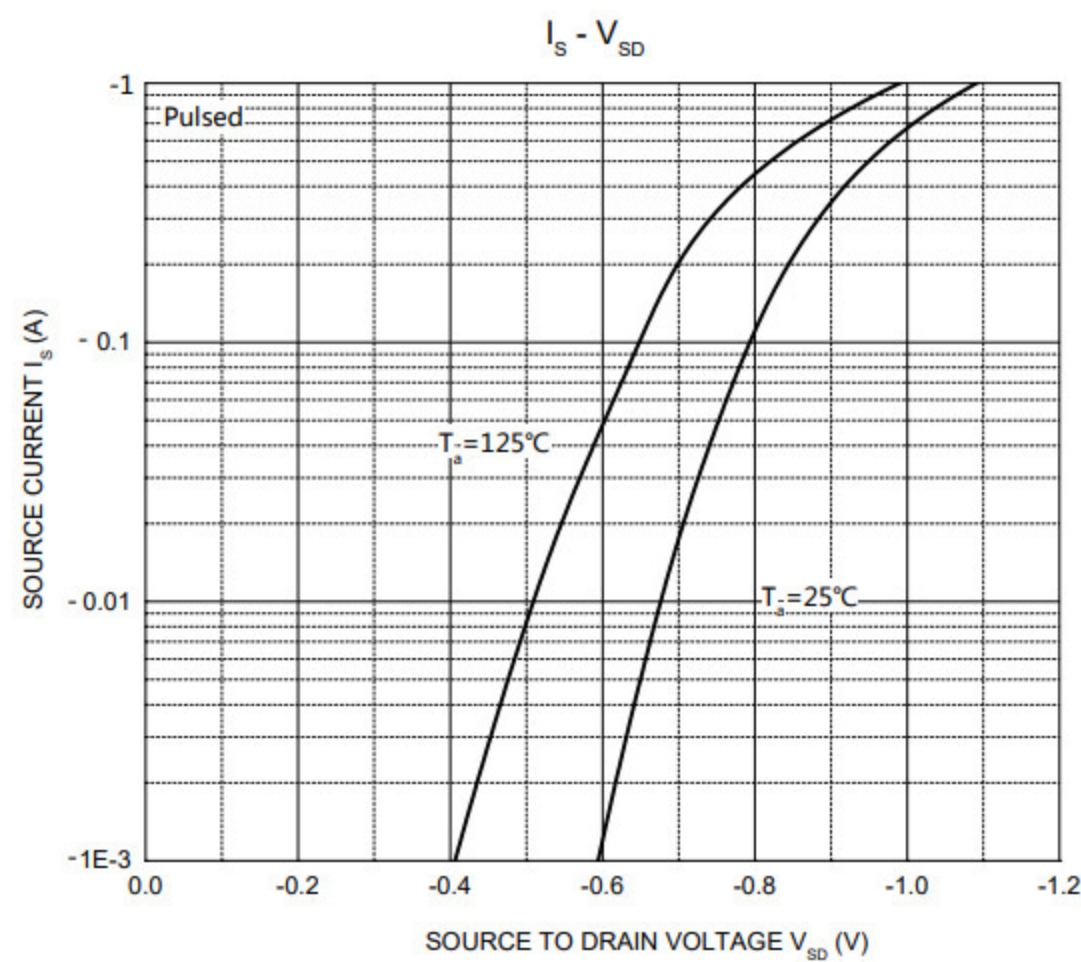
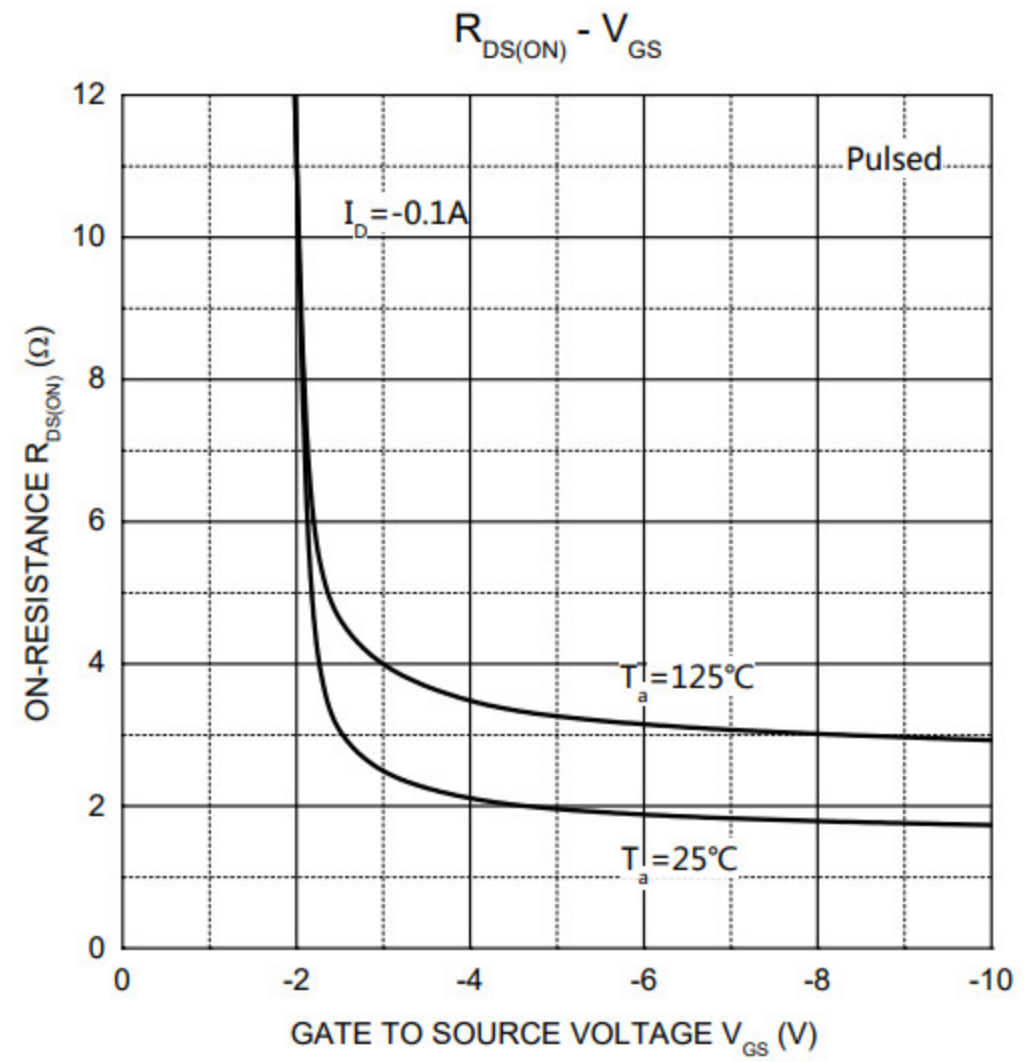
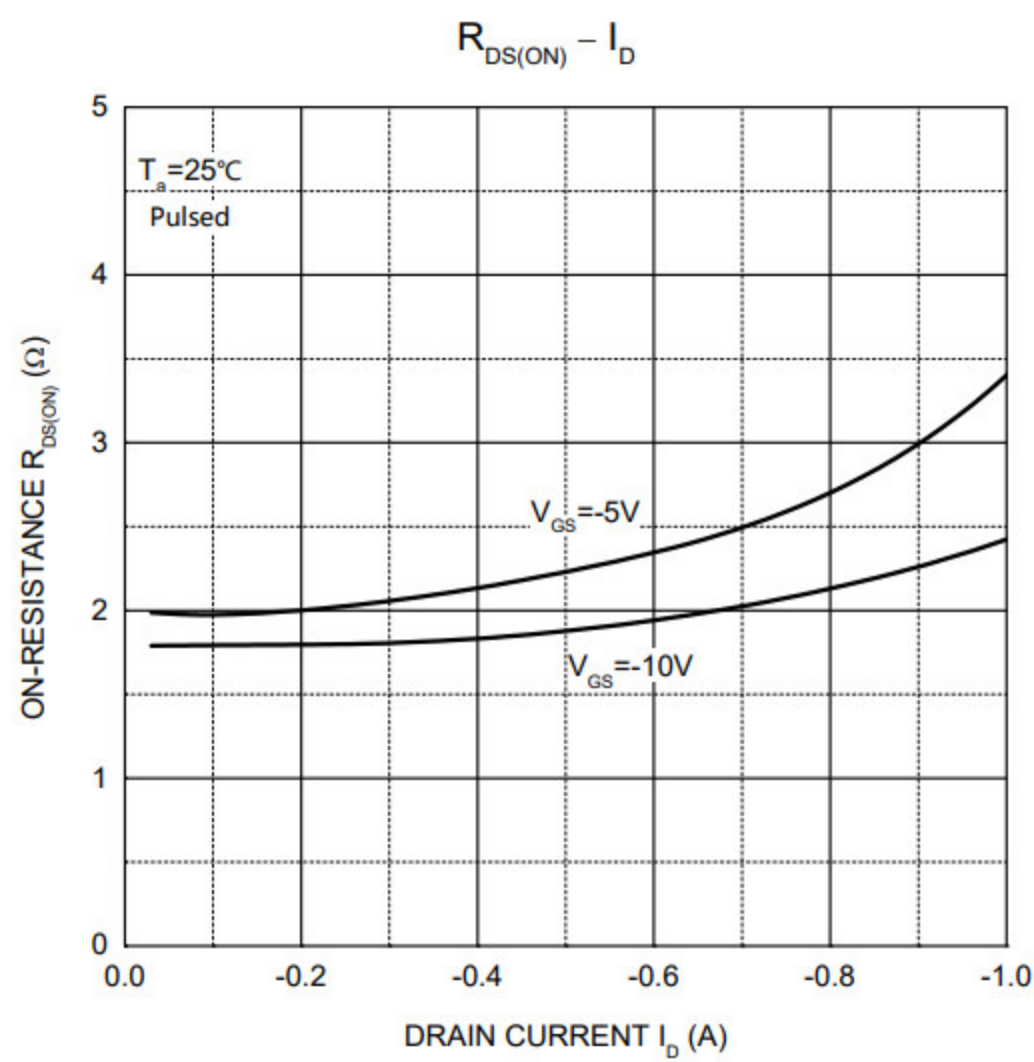
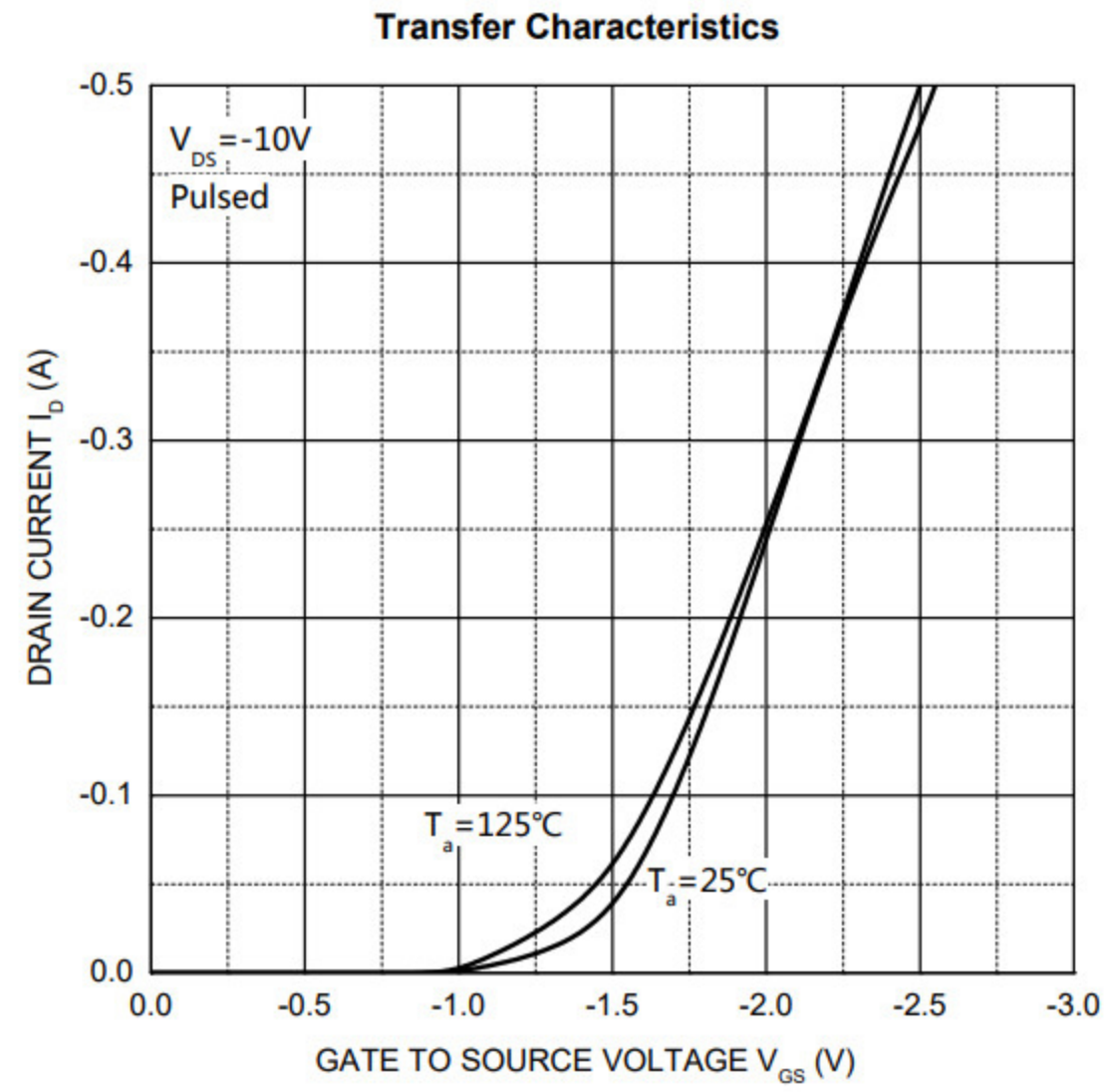
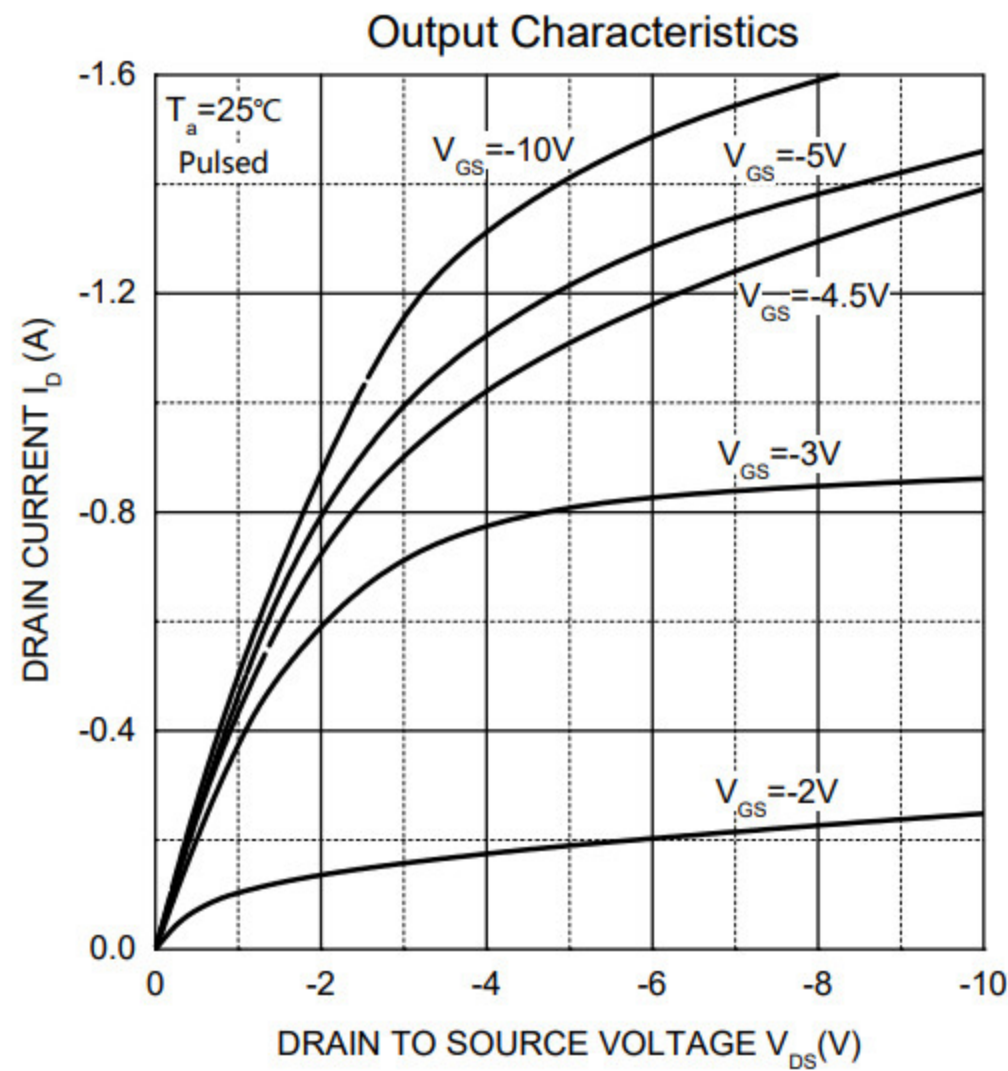
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	$-BV_{DSS}$	$-I_D=250\mu A, V_{GS}=0V$	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}	$V_{DS}=0V, V_{GS}=\pm 20V$	--	1	5	μA
Gate Threshold Voltage ^{Note3}	$-V_{GS(th)}$	$V_{DS}=V_{GS}, -I_D=250\mu A$	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	$t_{D(on)}$	$-V_{DD}=15V, R_L=50\Omega, -I_D=2.5A$	--	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

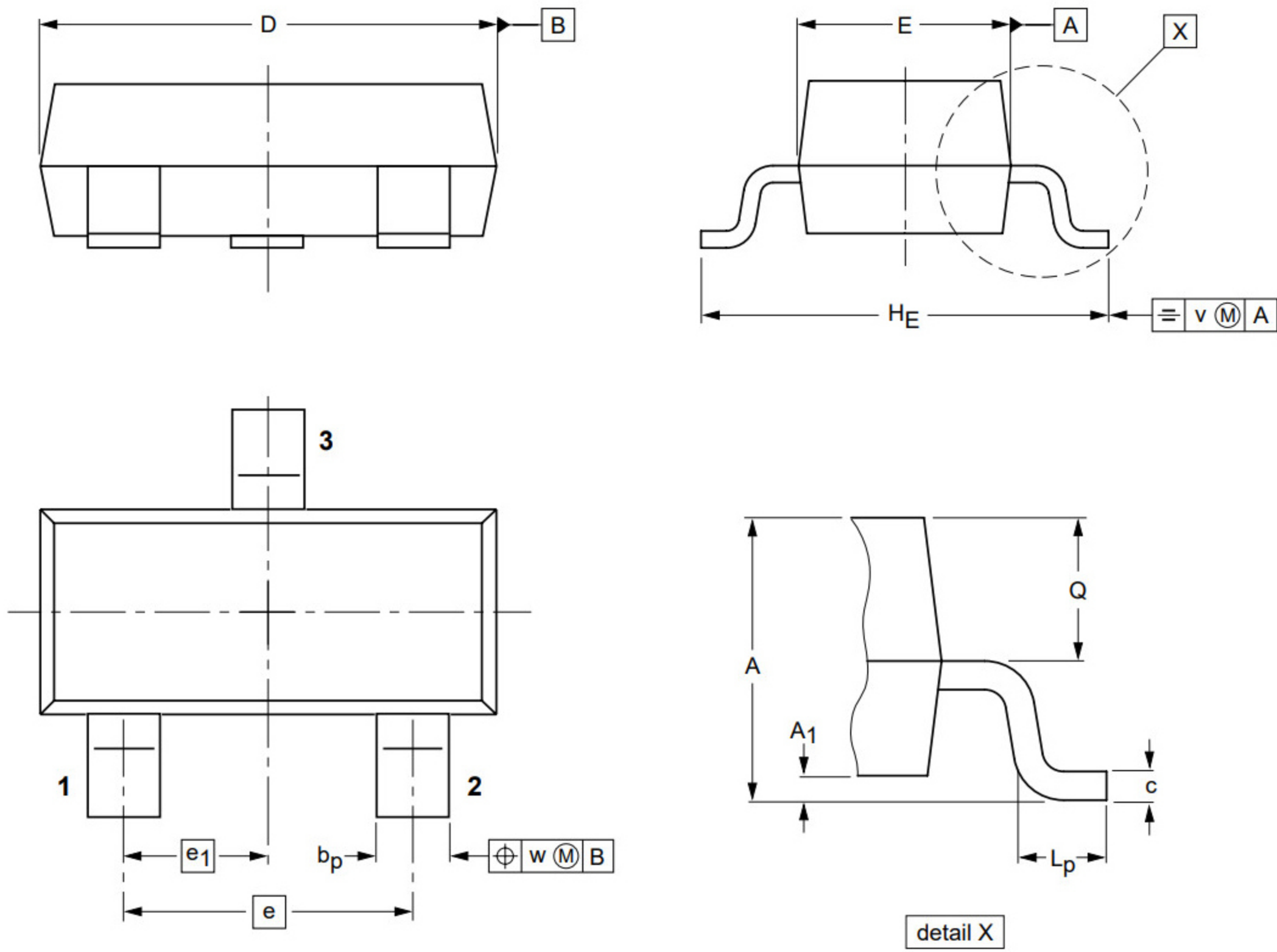
Notes: 1. Repetitive rating : Pulse width limited by junction temperature.

2. Surface mounted on FR4 board , $t \leq 10s$.

3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.



■ 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