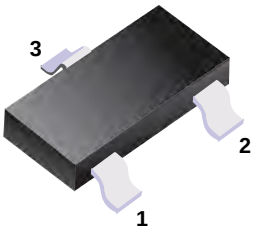
FTK1012S

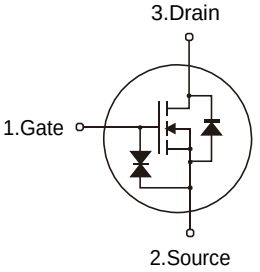
■ Features

- Excellent ON resistance
- Supper high density cell design
- ESD protected(HBM) up to 2KV
- V_{DS}= 20V,I_D= 0.8A
  $R_{DS(on)}$< 310mΩ @V_{GS}= 4.5V



1. Gate
2. Source
3. Drain

■ Simplified outline(SOT-23)



■ Applications

- DC-DC converter circuit
- Load switch
- Small Signal Switch

■ Absolute Maximum Ratings (Ta = 25℃)

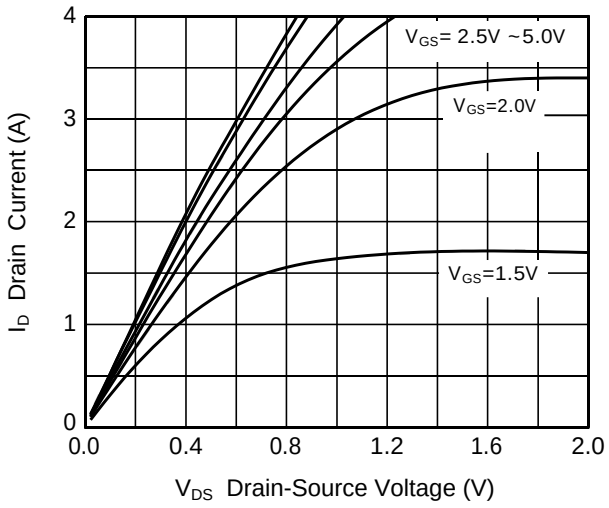
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±8	V
Drain Current-Continuous	I_D	0.8	A
Drain Current-Pulsed Note1	I_{DM}	3.2	A
Maximum Power Dissipation	P_D	0.35	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance,Junction-to-Ambient Note2	$R_{\theta JA}$	357	°C/W

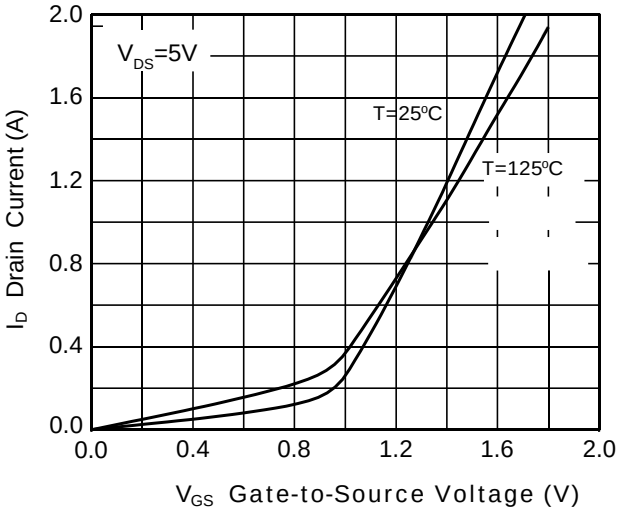
■ **Electrical Characteristics** (Ta = 25℃)

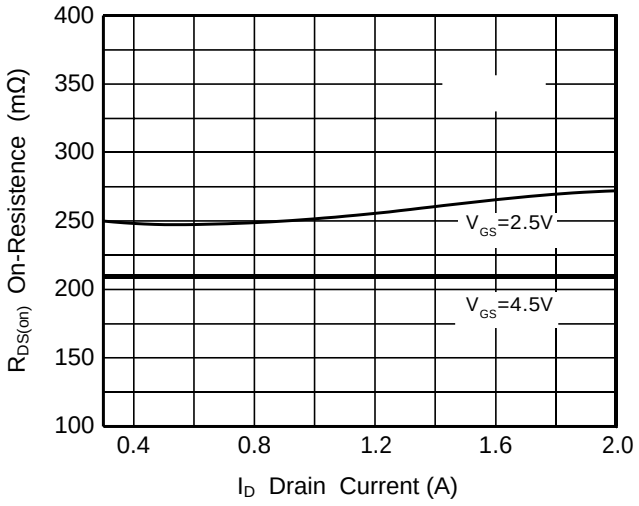
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±8V,V_{DS}=0V	--	--	±10	μA
Gate Threshold Voltage Note3	$V_{GS(h)}$	V_{DS}=V_{GS},I_D=250μA	0.5	0.8	1	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=4.5V,I_D=0.55A	--	220	310	mΩ
		V_{GS}=2.5V,I_D=0.5A	--	260	360	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=5V,I_D=0.5A	--	2	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V,f=1KHz	--	50	--	pF
Output Capacitance	C_{oss}		--	13	--	pF
Reverse Transfer Capacitance	C_{rss}		--	8	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V, I_D=0.55A V_{GS}=4.5V,R_G=6Ω	--	22	--	nS
Turn-on Rise Time	t_r		--	80	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	700	--	nS
Turn-off Fall Time	t_f		--	380	--	nS
Total Gate Charge	Q_g	V_{DS}=10V,I_D=0.55A, V_{GS}=4.5V	--	1.15	--	nC
Gate-Source Charge	Q_{gs}		--	0.15	--	nC
Gate-Drain Charge	Q_{gd}		--	0.23	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=0.5A	--	0.7	1.3	V
Diode Forward Current Note2	I_S		--	--	0.8	A

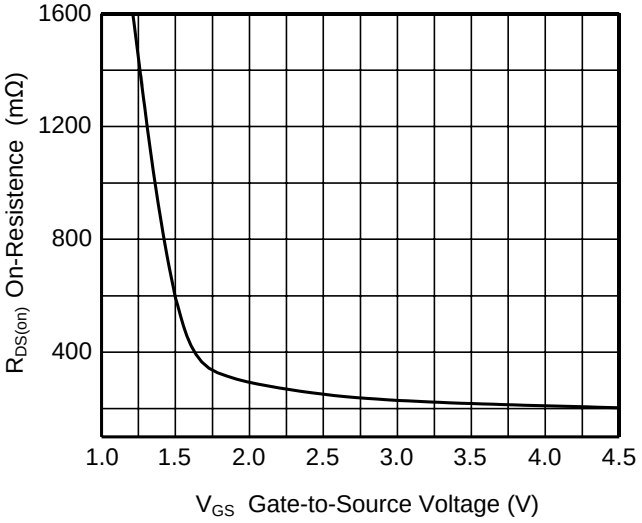
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.

Typical Performance Characteristics

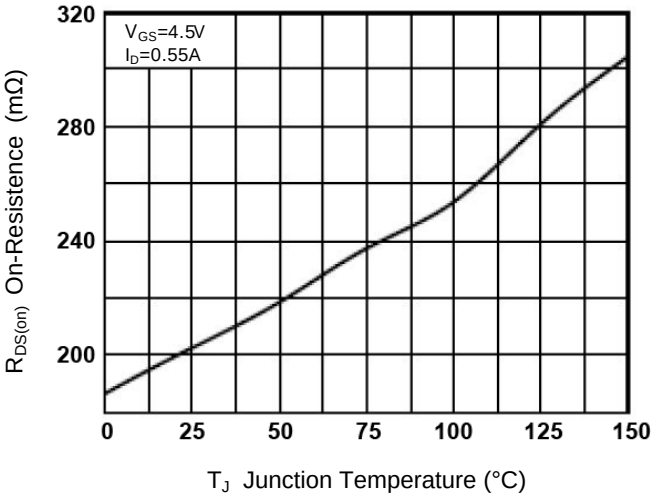


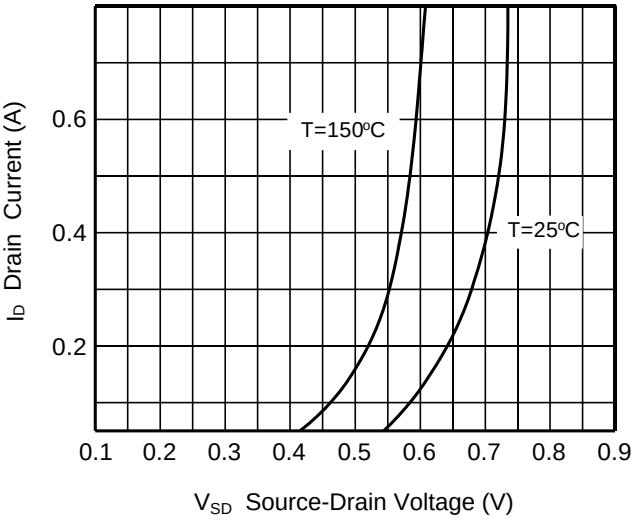


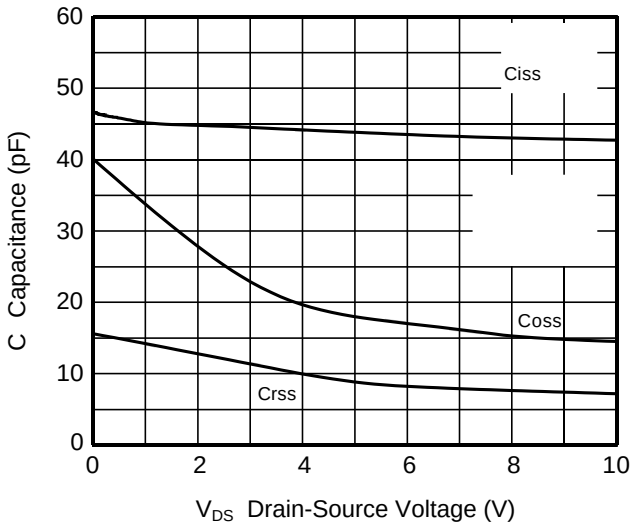


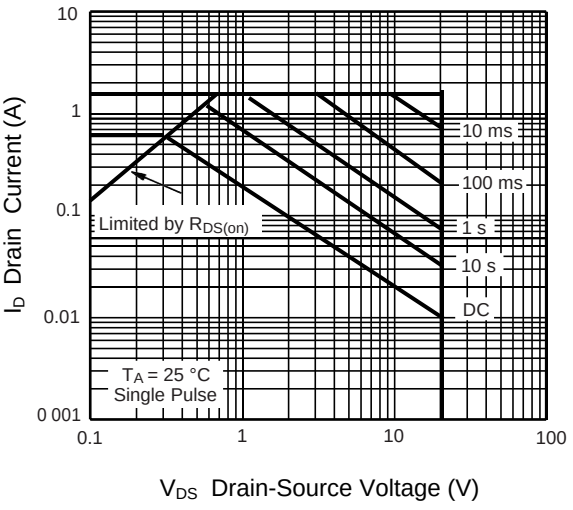


Typical Performance Characteristics(Con.)

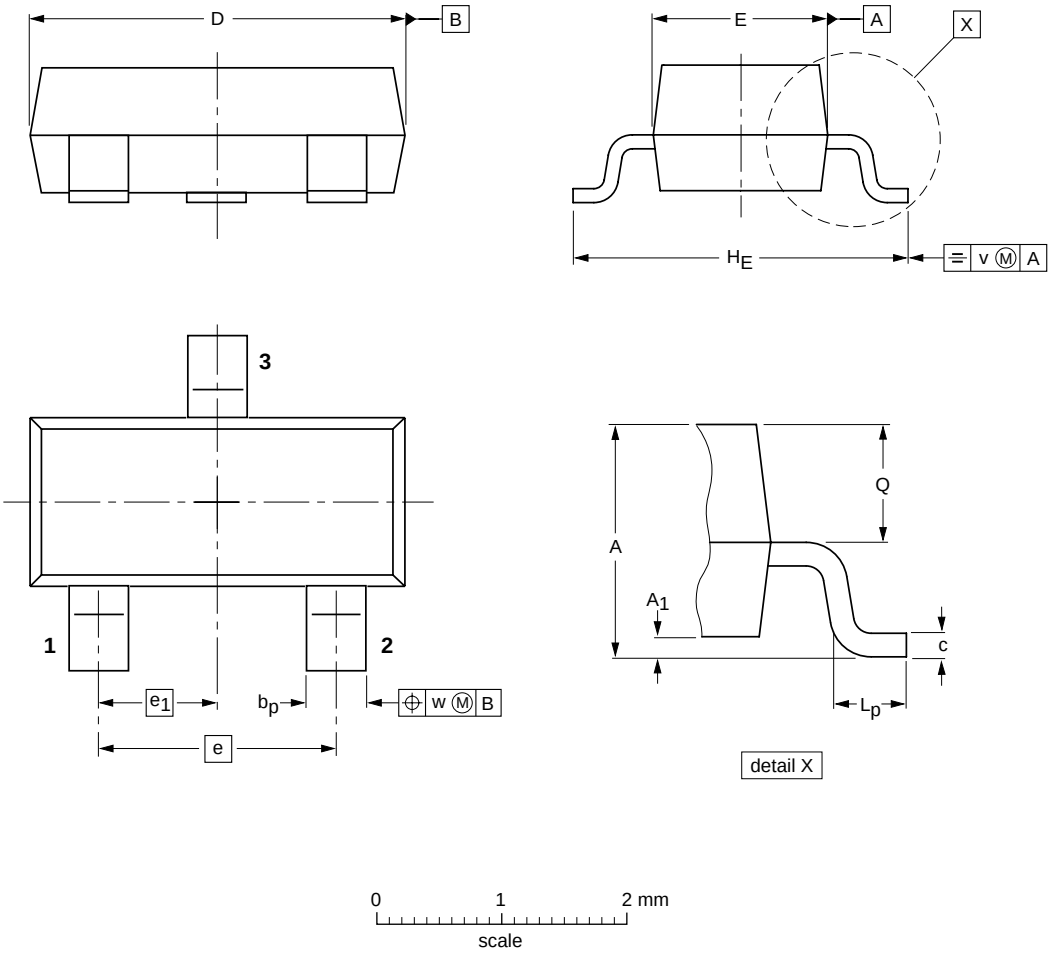








■ SOT-23



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