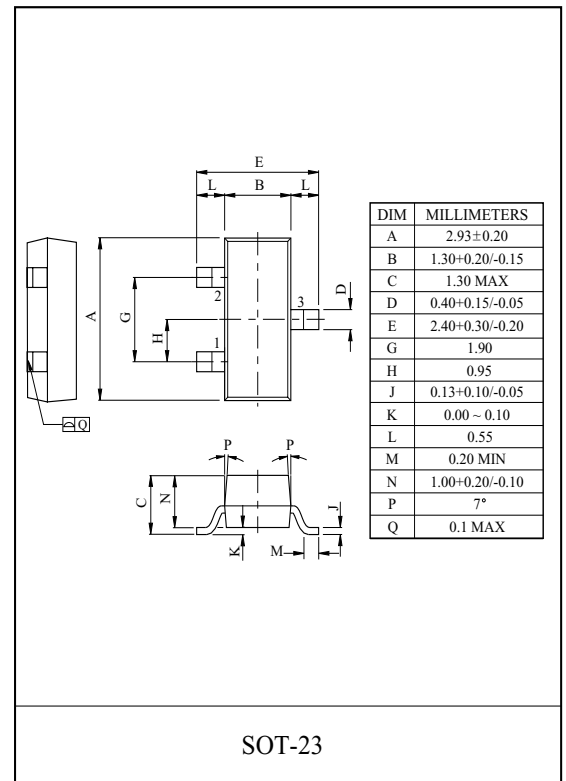


General Description

This Trench MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristics. It is mainly suitable for portable equipment.

FEATURES

- $V_{DSS} = -30V$, $I_D = -3A$
- Drain to Source On-state Resistance.
 - $R_{DS(ON)} = 80m\Omega$ (Max.) @ $V_{GS} = -10V$
 - $R_{DS(ON)} = 140m\Omega$ (Max.) @ $V_{GS} = -4.5V$
- Super High Dense Cell Design

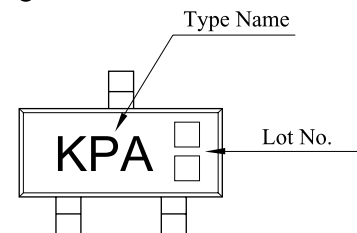


MAXIMUM RATING (Ta=25°C)

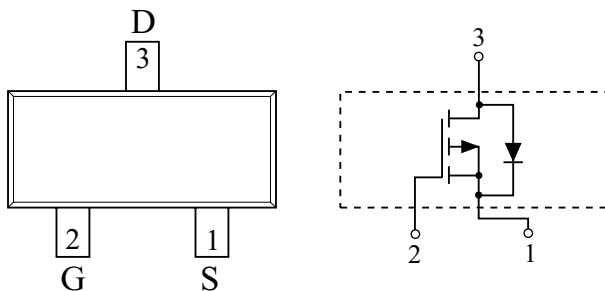
CHARACTERISTIC		SYMBOL	P-Ch	UNIT
Drain to Source Voltage		V_{DSS}	-30	V
Gate to Source Voltage		V_{GSS}	± 20	V
Drain Current	DC @ $T_a = 25^\circ C$ (Note1)	I_D	-3	A
	Pulsed (Note1)	I_{DP}	-12	
Drain Power Dissipation	$T_a = 25^\circ C$ (Note1)	P_D	1.25	W
	$T_a = 70^\circ C$ (Note1)		0.8	
Maximum Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient (Note1)		R_{thJA}	100	°C/W

Note1) Surface Mounted on 1" × 1" FR4 Board, t ≤ 5sec.

Marking



PIN CONNECTION (TOP VIEW)



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ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain to Source Breakdown Voltage	BV _{DSS}	I _{DS} =-250μA, V _{GS} =0V,	-30	-	-	V
Drain Cut-off Current	I _{DSS}	V _{GS} =0V, V _{DS} =-24V	-	-	-1	μA
		V _{GS} =0V, V _{DS} =-24V, T _j =55°C	-	-	-10	
Gate to Source Leakage Current	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V	-	-	± 100	nA
Gate to Source Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-	-3.0	V
Drain to SourceSource On Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-3A (Note2)	-	64	80	mΩ
		V _{GS} =-4.5V, I _D =-2.5A (Note2)	-	103	140	
On State Drain Current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V (Note2)	-12	-	-	A
Forward Transconductance	g _{fs}	V _{DS} =-10V, I _D =-3A (Note2)	-	4.5	-	S
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} = 0V, f=1MHz,	-	365	-	pF
Output Capacitance	C _{oss}		-	72	-	
Reverse Transfer Capacitance	C _{rss}		-	37	-	
Total Gate Charge	Q _g	V _{DS} =-15V, V _{GS} =-10V, I _D =-3A (Note2)	-	6.3	-	nC
Gate to Source Charge	Q _{gs}		-	1.1	-	
Gate to Drain Charge	Q _{gd}		-	1.6	-	
Turn-on Delay time	t _{d(on)}	V _{DD} =-15V, V _{GS} =-10V I _D =-1A, R _G =6Ω (Note2)	-	6.9	-	ns
Turn-on Rise time	t _r		-	16	-	
Turn-off Delay time	t _{d(off)}		-	18	-	
Turn-off Fall time	t _f		-	15	-	
Source-Drain Diode Ratings						
Continuous Source Current	I _S	-	-	-	-3.0	A
Pulsed Source Current	I _{SP}	- (Note2)	-	-	-12	A
Source to Drain Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1.25A (Note2)	-	-	-1.2	V
Note2) Pulse Test : Pulse width <300μs , Duty cycle < 2%						

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Fig1. $I_D - V_{DS}$

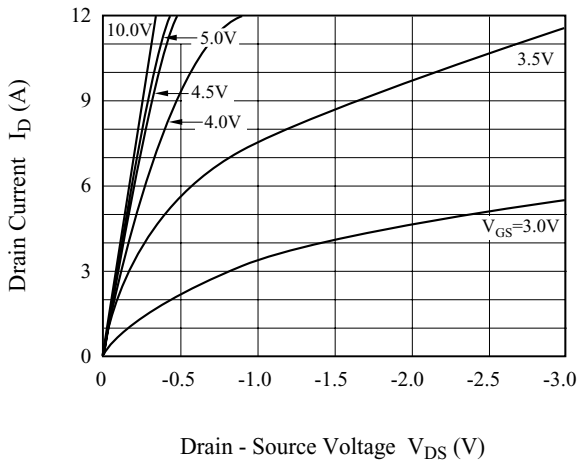


Fig2. $R_{DS(on)} - I_D$

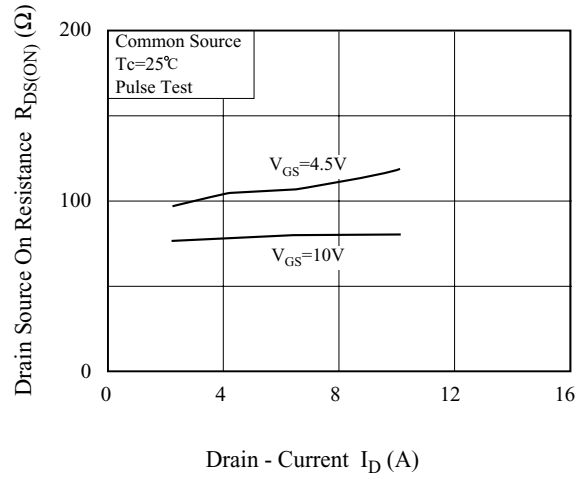


Fig3. $I_D - V_{GS}$

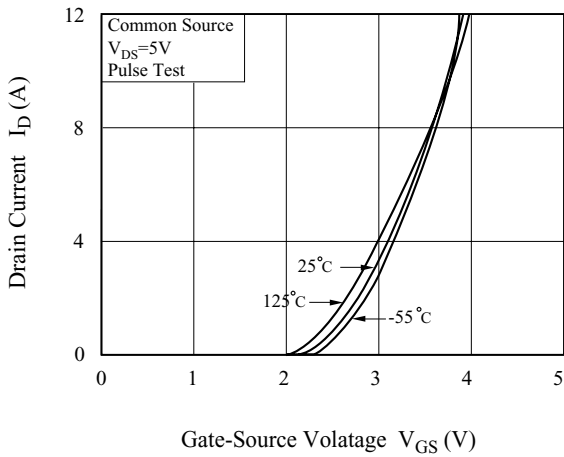


Fig4. $R_{DS(on)} - T_j$

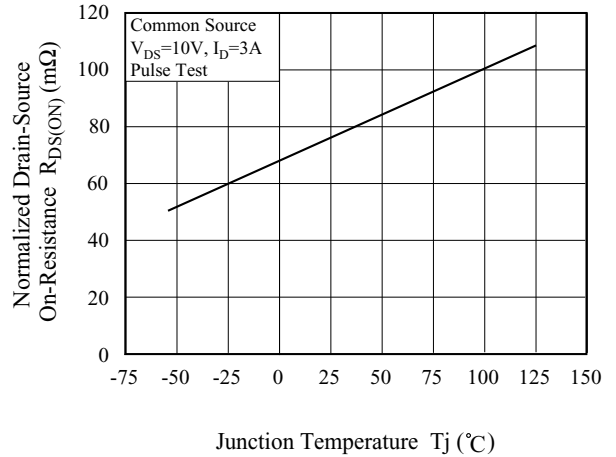


Fig5. $V_{th} - T_j$

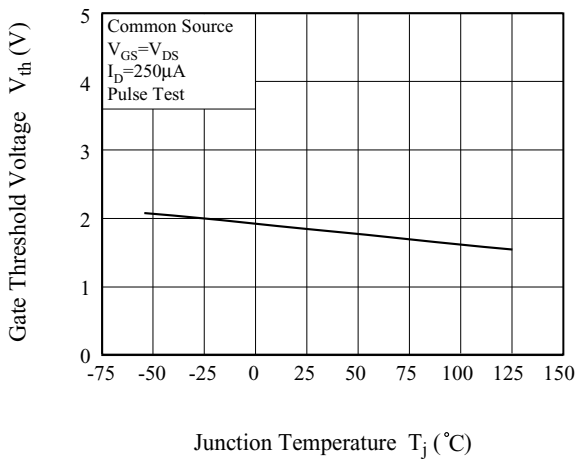
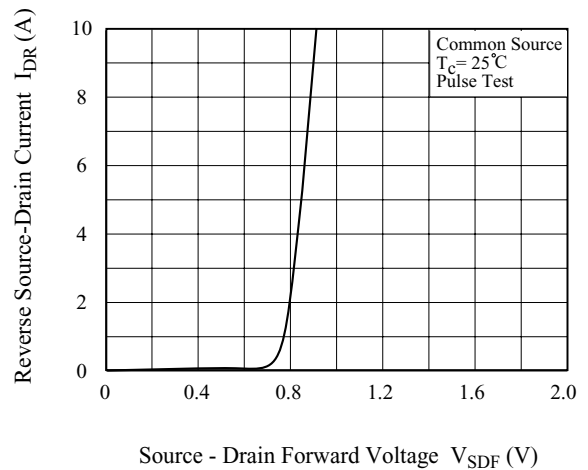


Fig6. $I_{DR} - V_{SDF}$



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Fig7. $R_{DS(ON)} - V_{GS}$

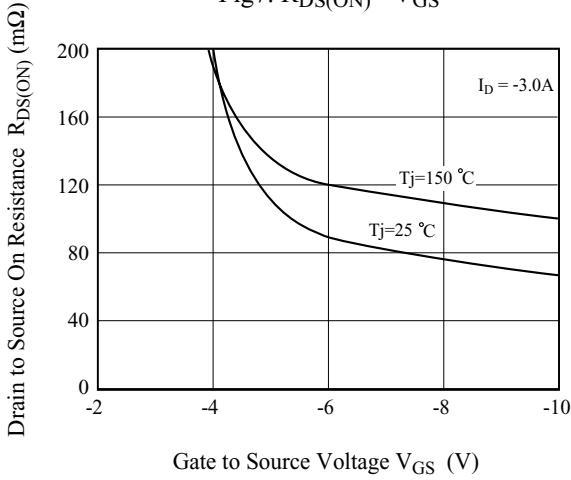


Fig8. $C - V_{DS}$

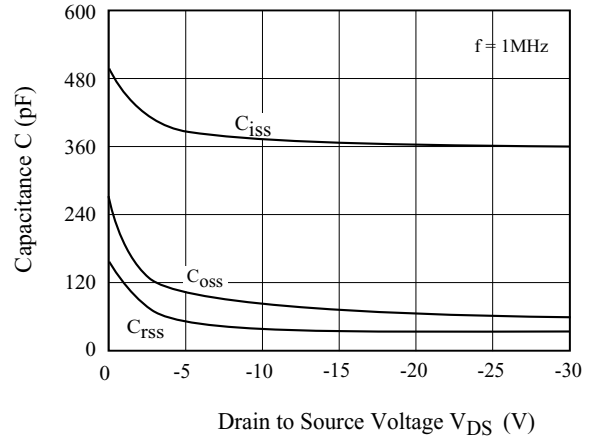


Fig9. $Q_g - V_{GS}$

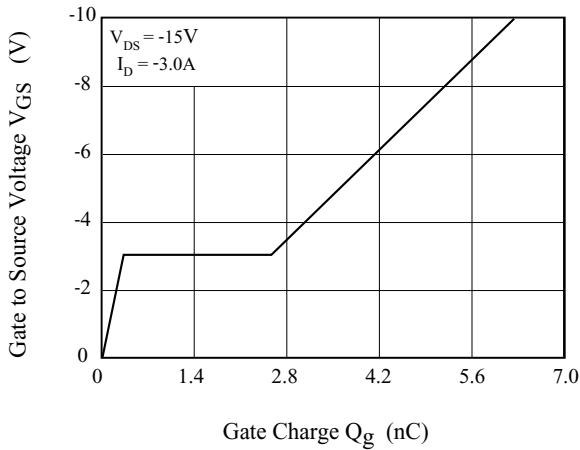


Fig10. Safe Operation Area

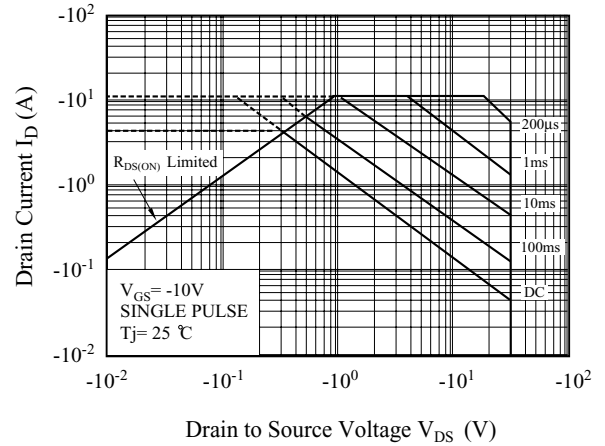


Fig11 . Transient Thermal Response Curve

