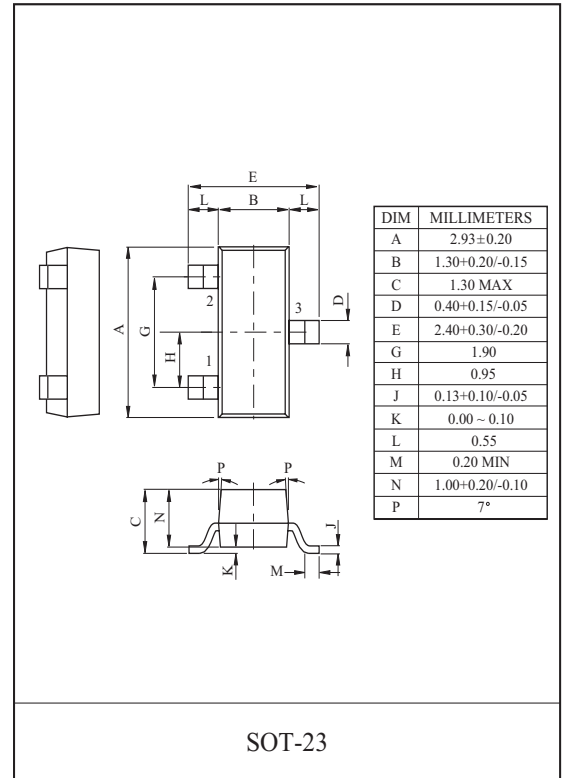


General Description

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
 $R_{DS(ON)} = 80m$ (Max.) @ $V_{GS} = -10V$
 $R_{DS(ON)} = 140m$ (Max.) @ $V_{GS} = -4.5V$
- Super High Dense Cell Design

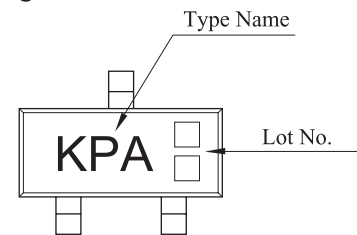


MAXIMUM RATING (Ta=25 °C)

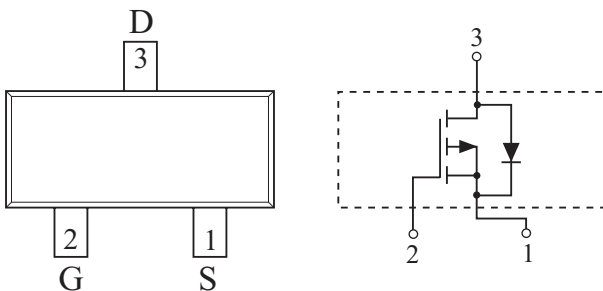
CHARACTERISTIC		SYMBOL	P-Ch	UNIT
Drain to Source Voltage		V_{DSS}	-30	V
Gate to Source Voltage		V_{GSS}	± 20	V
Drain Current	DC @ $T_a = 25$ (Note1)	I_D	-3	A
	Pulsed (Note1)	I_{DP}	-12	
Drain Power Dissipation	$T_a = 25$ (Note1)	P_D	1.25	W
	$T_a = 70$ (Note1)		0.8	
Maximum Junction Temperature		T_j	150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

Note1) Surface Mounted on 1" x 1" FR4 Board, t = 5sec.

Marking



PIN CONNECTION (TOP VIEW)



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ELECTRICAL CHARACTERISTICS (Ta=25)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain to Source Breakdown Voltage	BV_{DSS}	$I_{DS}=-250\ \mu A, V_{GS}=0V,$	-30	-	-	V
Drain Cut-off Current	I_{DSS}	$V_{GS}=0V, V_{DS}=-24V$	-	-	-1	μA
		$V_{GS}=0V, V_{DS}=-24V, T_j=55$	-	-	-10	
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate to Source Threshold Voltage	V_{th}	$V_{DS}=V_{GS}, I_D=-250\ \mu A$	-1.0	-	-3.0	V
Drain to Source On Resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-3A$ (Note2)	-	64	80	m
		$V_{GS}=-4.5V, I_D=-2.5A$ (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	$t_{d(on)}$	$V_{DD}=-15V, V_{GS}=-10V$ $I_D=-1A, R_G=6$ (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}	-	-	-	-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 <300 μs , Duty cycle < 2%						

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Fig1. $I_D - V_{DS}$

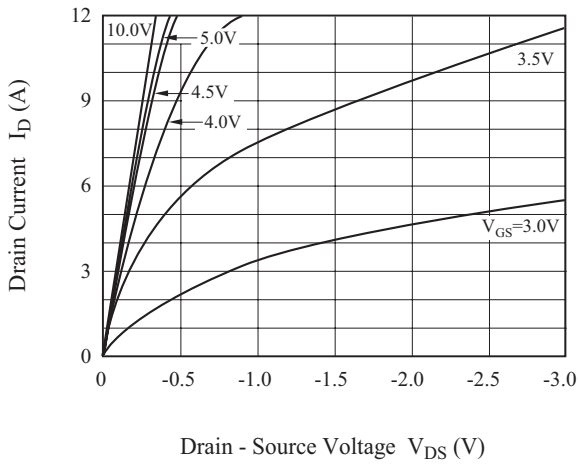


Fig2. $R_{DS(on)} - I_D$

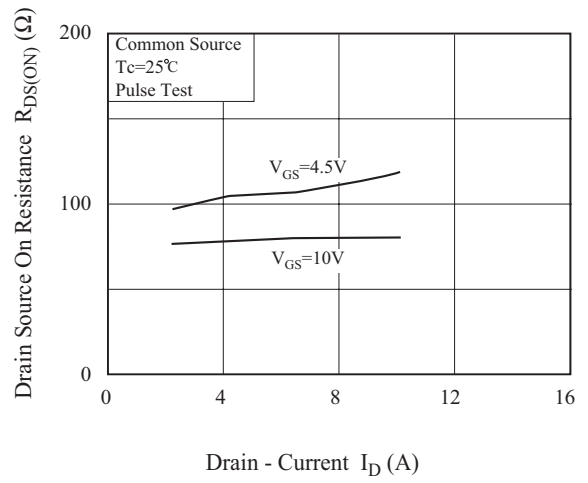


Fig3. $I_D - V_{GS}$

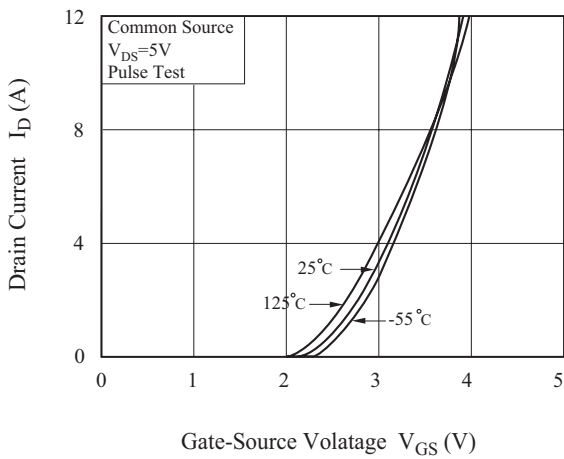


Fig4. $R_{DS(on)} - T_j$

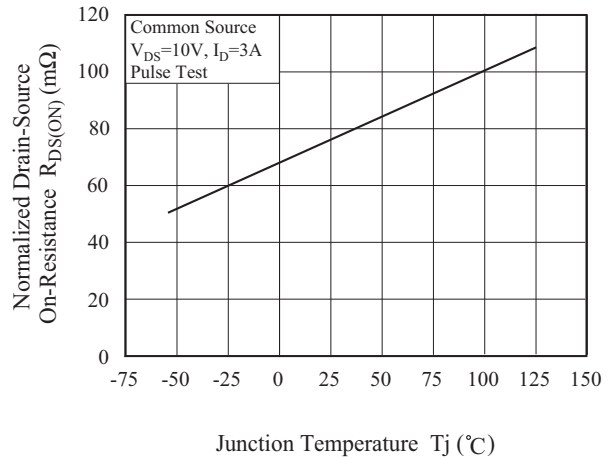


Fig5. $V_{th} - T_j$

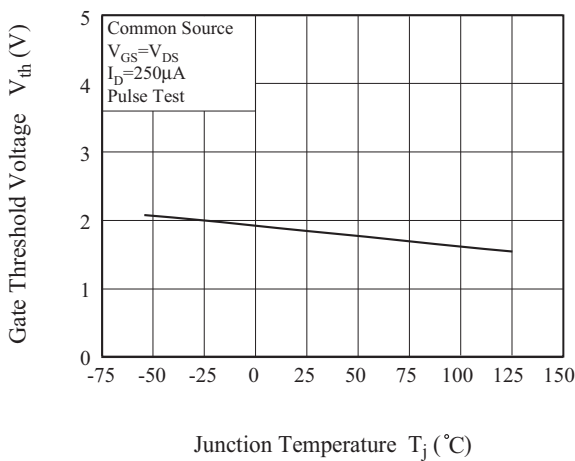
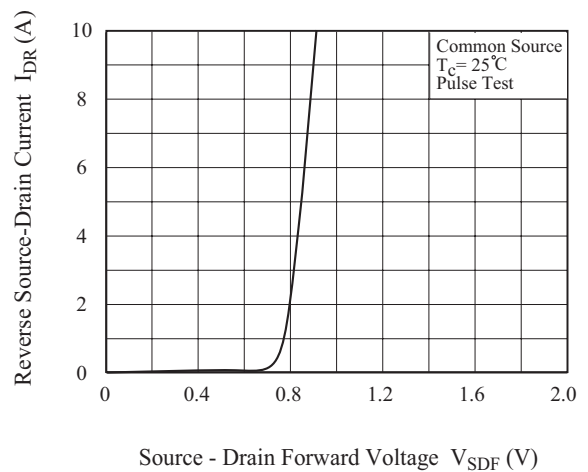


Fig6. $I_{DR} - V_{SDF}$



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

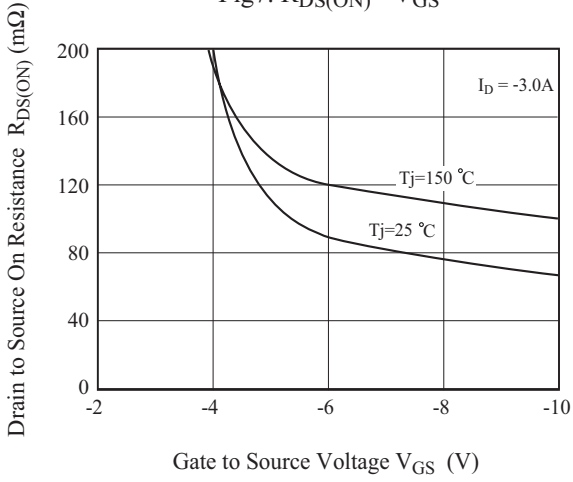


Fig8. $C - V_{DS}$

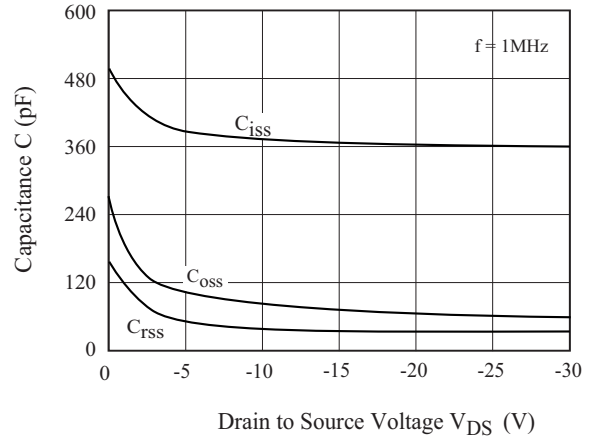


Fig9. $Q_g - V_{GS}$

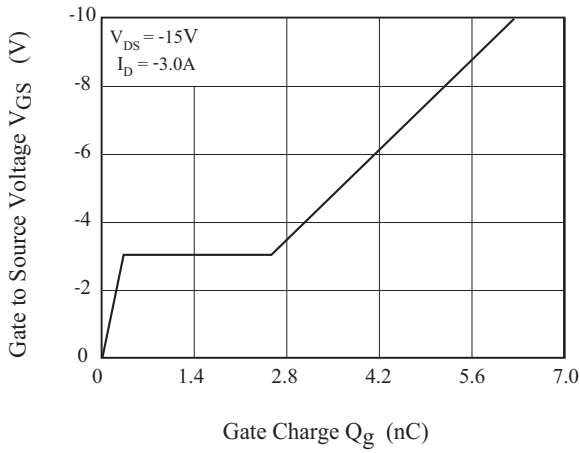


Fig10. Safe Operation Area

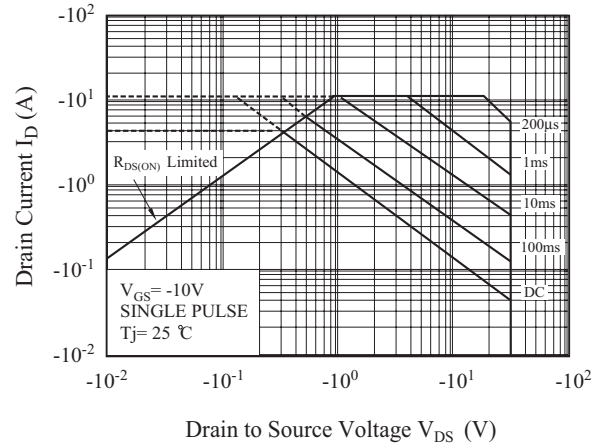


Fig11 . Transient Thermal Response Curve

