Single P-Channel, -30V, -2.7A, Power MOSFET

Features

- ✧ Trench Technology
- ✧ Supper high density cell design
- ✧ Excellent ON resistance
- ✧ Extremely Low Threshold Voltage
- ✧ Small package SOT-23

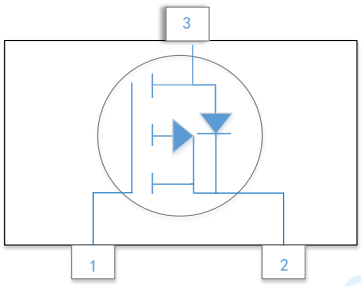
V_{DS} (V)	Max $R_{DS(on)}$ (mΩ)
-30	88 @ V_{GS}=-10V
	138 @ V_{GS}=-4.5V

Applications

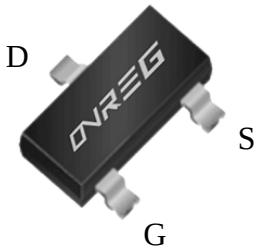
- ✧ PWM applications
- ✧ Power supply converters circuit
- ✧ Load/Power Switching for portable device

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch
- ✧ RoHS/WEEE Complain



Circuit Diagram



SOT-23

Absolute Maximum Rating at T_A = 25℃, unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-30	V
Gate-source voltage	V_{GS}	±20	V
Continuous drain current	I_D	-2.7	A
Continuous Source-Drain Diode current	I_S	-0.91	A
Power dissipation	P_D	1.1	W
Thermal resistance from Junction to ambient	$R_{\theta JA}$	114	°C/W
Junction temperature	T_J	150	°C
Storage temperature	T_{STG}	-55 ~+150	°C

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Electronics Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Drain-Source breakdown voltage	$V_{(BR)DSS}$	-30			V	V_{GS}=0V, I_D=-250μA
Zero gate voltage drain current	I_{DSS}			-1	uA	V_{DS}=-30V, V_{GS}=0V
				-10	uA	V_{DS}=-30V, V_{GS}=0V,T_J=55°C
Gate-body leakage current	I_{GSS}			±100	nA	V_{DS}=0V, V_{GS}=±20V
Gate-threshold voltage (note 1)	$V_{GS(th)}$	-1		-3	V	V_{DS}=V_{GS}, I_D=-250μA
Drain-source on-resistance (note 1)	$R_{DS(ON)}$		110	138	mΩ	V_{GS}=-4.5V, I_D=-2.8A
			73	88	mΩ	V_{GS}=-10V, I_D=-3.5A
Forward transconductance (note 1)	g_{FS}		7		S	V_{DS}=-10V, I_D=-3.5A
Gate resistance	R_g		10		Ω	f=1MHz
Input capacitance	C_{iss}		340		pF	V_{DS}=-15V, V_{GS}=0V, f=1MHz
Output capacitance	C_{oss}		67		pF	
Reverse transfer capacitance	C_{rss}		51		pF	
Turn-on delay time	$t_{d(on)}$		40	60	nS	V_{DD}=-15V,I_D=-1A, V_{GEN}=-4.5V,R_g=1Ω,R_L=15Ω
Turn-on rise time	t_r		40	60	nS	
Turn-off delay time	$t_{d(off)}$		20	40	nS	
Turn-off fall time	t_f		17	30	nS	
Total gate charge	Q_g		4.1	6.2	nC	V_{DS}=-15V,V_{GS}=-4.5V,I_D=-2.5A
Gate-source charge	Q_{gs}		0.7		nC	
Gate-drain charge	Q_{gd}		1.3		nC	
Diode forward voltage (note 1)	V_{SD}		-0.8	-1.2	V	I_S=-0.75A, V_{GS}=0V

Note:1. Pulse test ; Pulse width ≤300μs, Duty cycle ≤ 2% .

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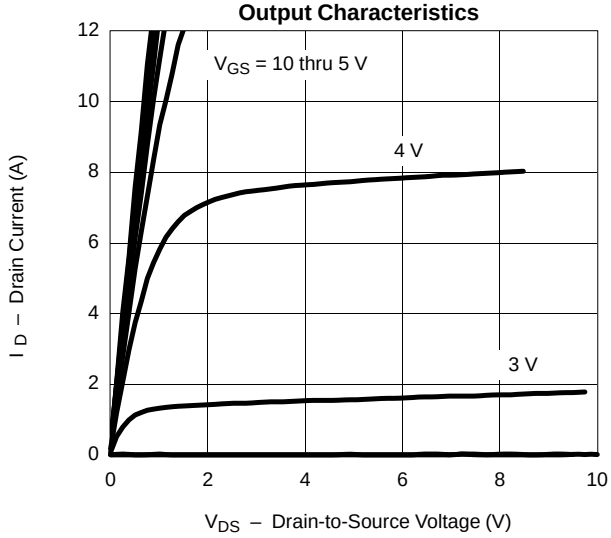
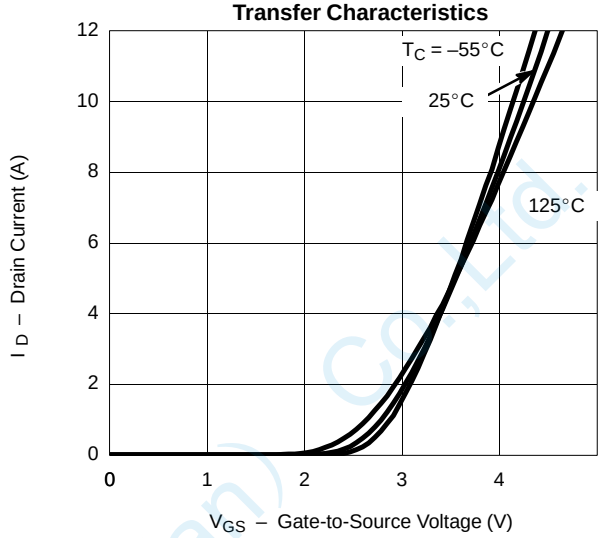
Electronics Characteristics (Ta=25°C, unless otherwise noted)

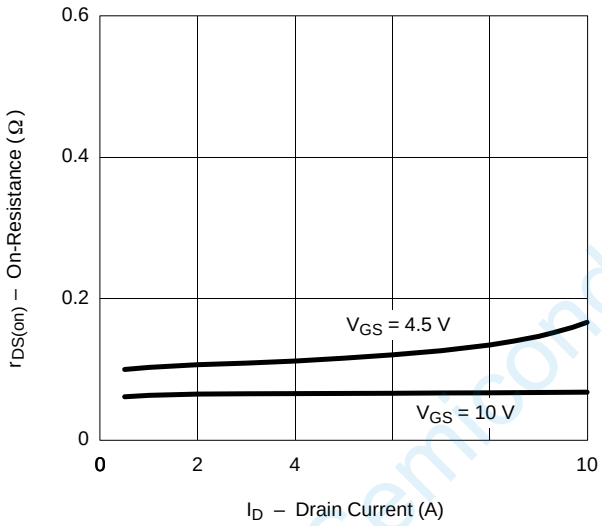
Output Characteristics



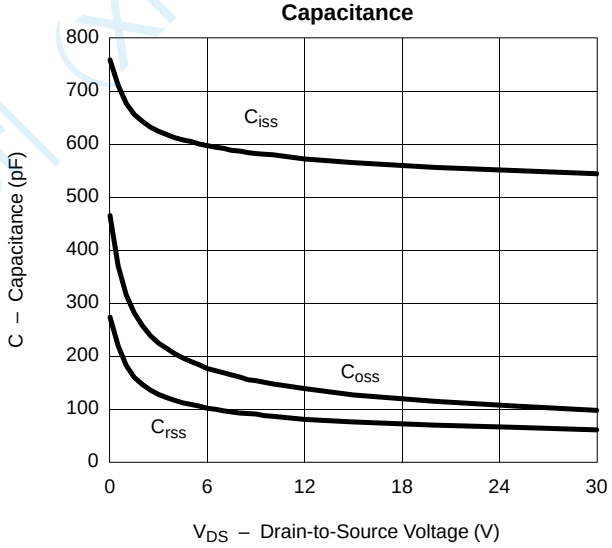
Transfer Characteristics



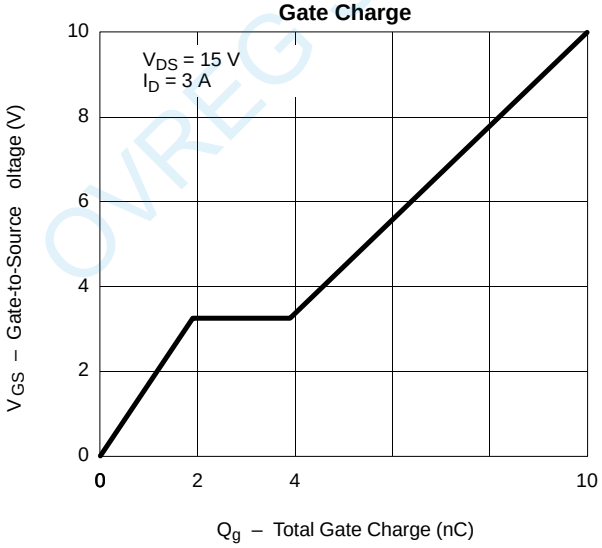
On-Resistance vs. Drain Current



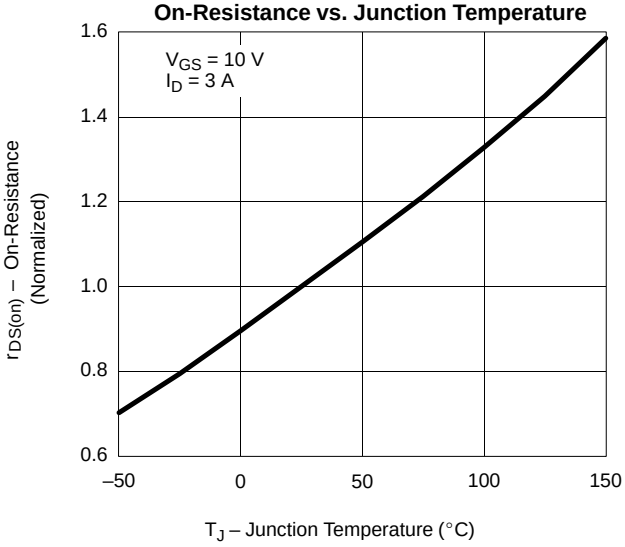
Capacitance



Gate Charge



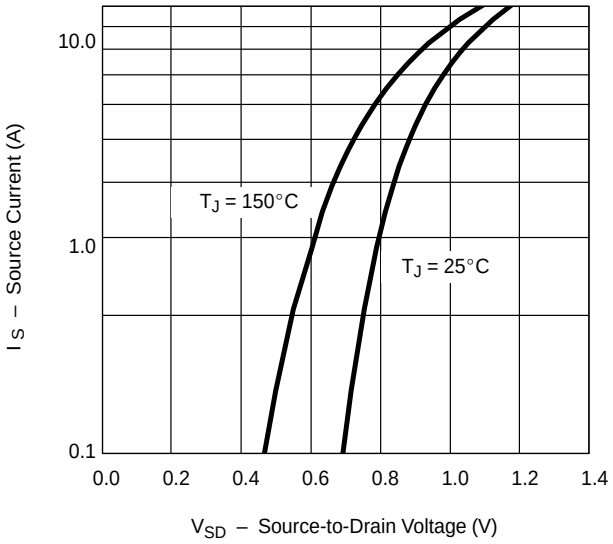
On-Resistance vs. Junction Temperature



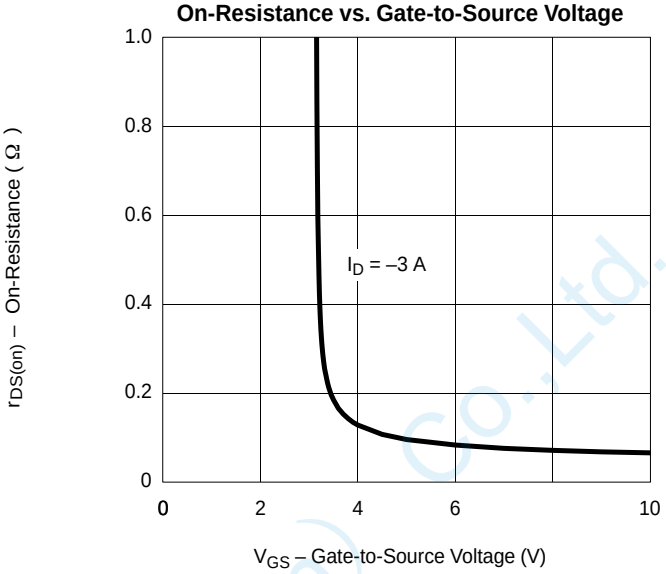
OVREG Semiconductor (Xi'an) Co.,Ltd.

Electronics Characteristics (Ta=25°C, unless otherwise noted)

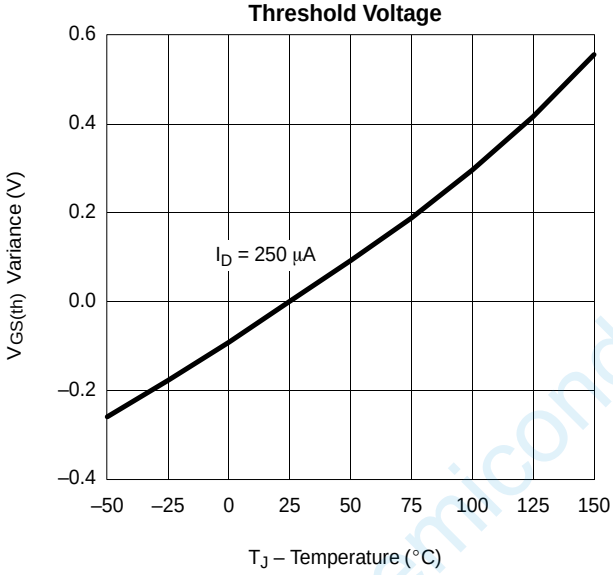
Source-Drain Diode Forward Voltage



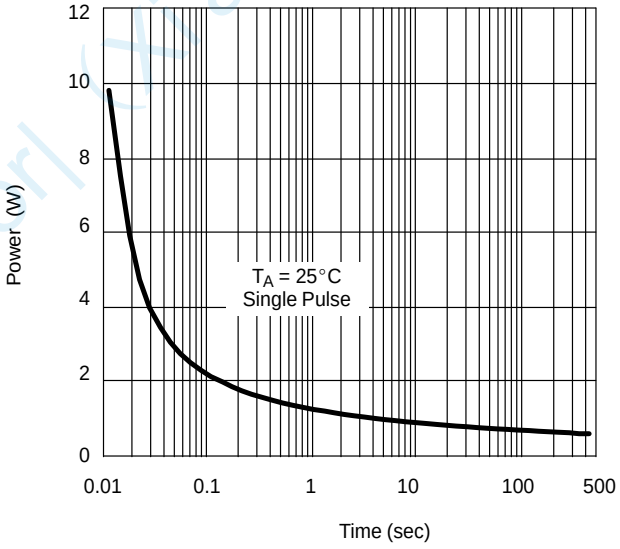
On-Resistance vs. Gate-to-Source Voltage



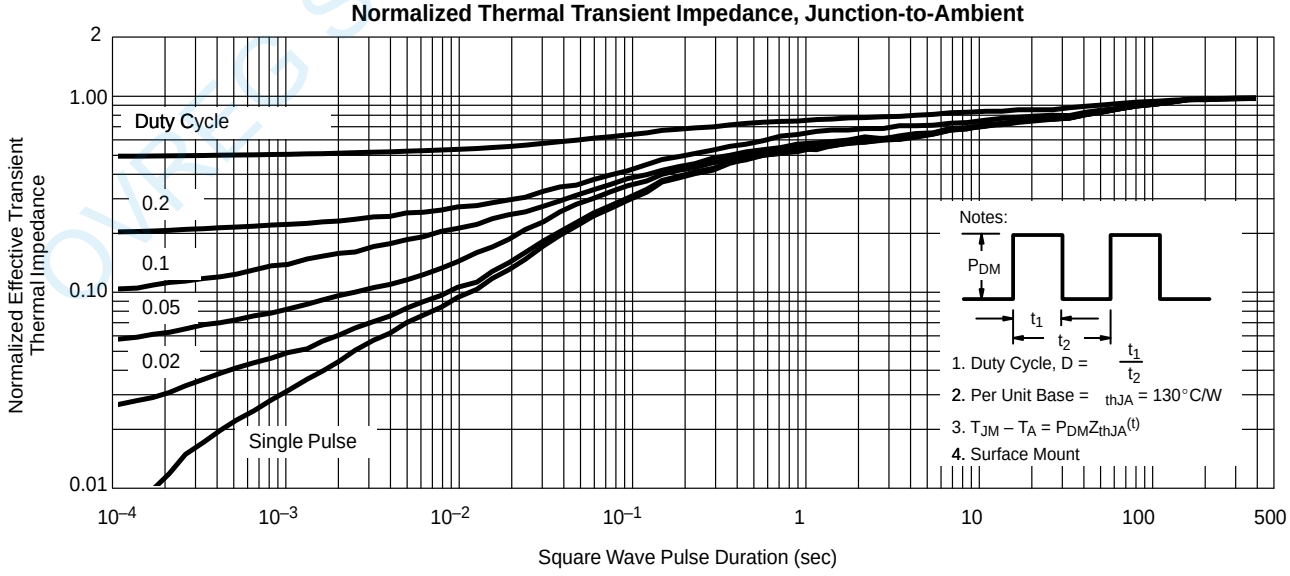
Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient



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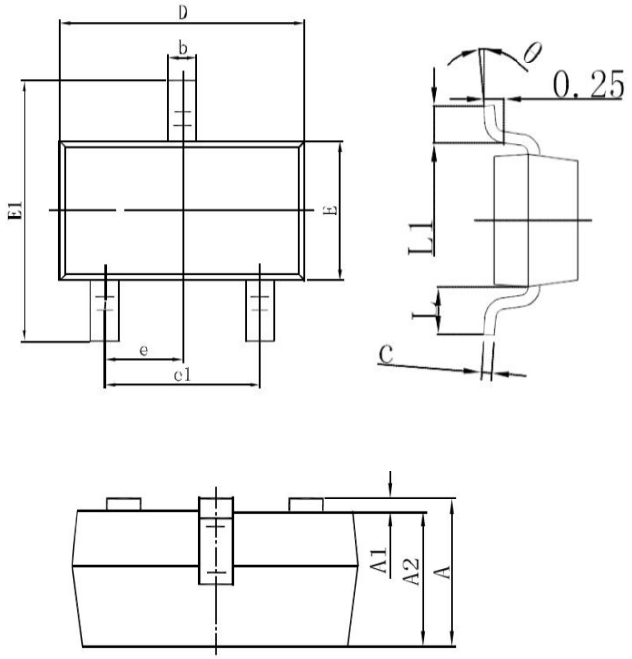
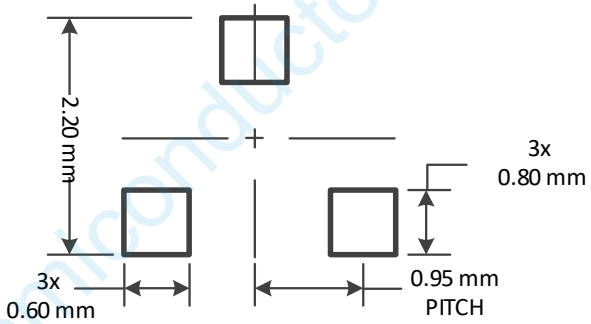
Package information



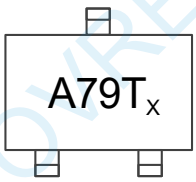
Symbol	Dimensions In Millimeters	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	1.150
D	2.900	3.100
E	1.200	1.400
E1	2.250	2.550
e	0.95REF	
e1	1.800	2.000
L	0.55REF	
L1	0.300	0.500

Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



X:Date Code

Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVM30P138T	GREEN	T/R	7 inch	3k/reel	10reel= 30k/box	4boxes=120k/carton

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