Single N-Channel, 60V, Power MOSFET

Features

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

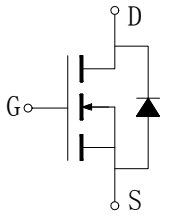
V_{DS} (V)	Typ. $R_{DS(on)}$ (mΩ)
60	75 @ V_{GS}=10V
	85 @ V_{GS}=4.5V

Applications

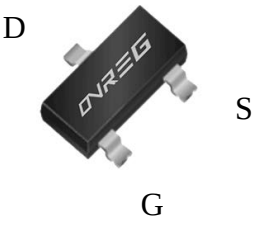
- ✧ DC/DC converters
- ✧ Power supply converters circuit
- ✧ Load/Power Switching for portable device

Mechanical Data

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



Circuit Diagram



SOT-23

Absolute Maximum Rating (Ta=25℃, unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	60	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current[1,5]	T_A = 25℃	I_D	3	A
Pulsed Drain Current[2]		I_{DM}	12	A
Power Dissipation[4,5]	T_A = 25℃	P_D	1.5	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	83.3	℃/W
Junction and Storage Temperature Range		T_J,T_{STG}	-55~ +150	℃

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Electronics Characteristics (Ta=25℃, unless otherwisen oted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	60	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V, V_{GS}=0V,	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.0	1.4	2.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS}=10V, I_D=3A	-	75	100	mΩ
		V_{GS}=4.5V, I_D=2A	-	85	120	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1.0MHz	-	350	-	pF
C_{oss}	Output Capacitance		-	29	-	pF
C_{rss}	Reverse Transfer Capacitance		-	23	-	pF
Q_g	Total Gate Charge	V_{DS}=30V, I_D=3A, V_{GS}=10V	-	9	-	nC
Q_{gs}	Gate-Source Charge		-	1.5	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	2	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=30V,I_D=2A, R_{GEN}=3Ω, V_{GS}=10V	-	5	-	ns
t_r	Turn-on Rise Time		-	7	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	37	-	ns
t_f	Turn-off Fall Time		-	22	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	3	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	12	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S=3A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

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Electronics Characteristics (Ta=25℃, unless otherwise noted)

Figure1: Output Characteristics

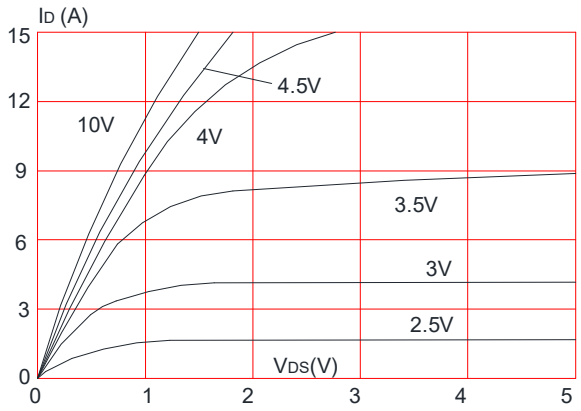


Figure 2: Typical Transfer Characteristics

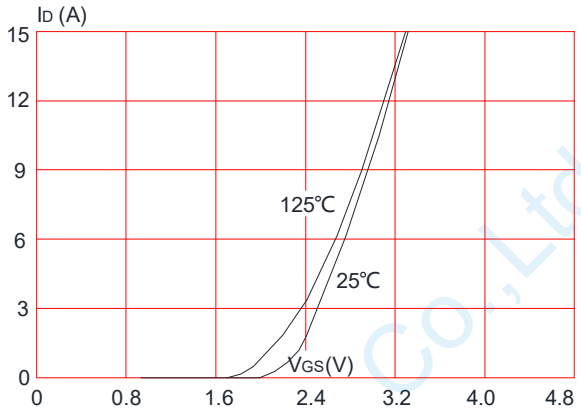


Figure 3: On-resistance vs. Drain Current

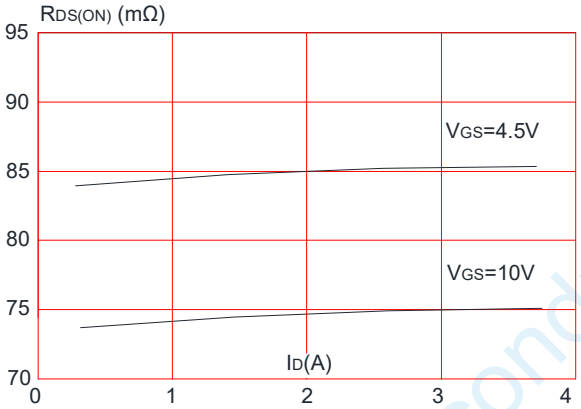


Figure 4: Body Diode Characteristics

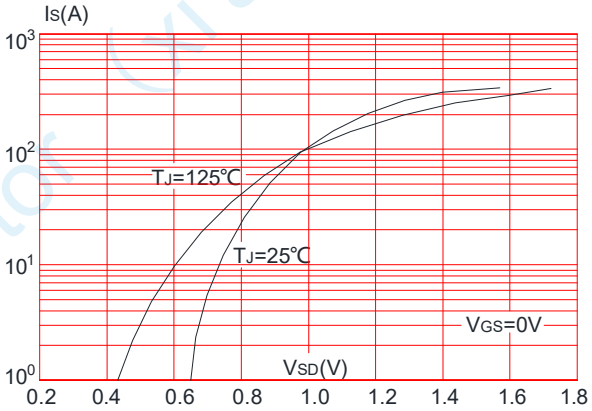


Figure 5: Gate Charge Characteristics

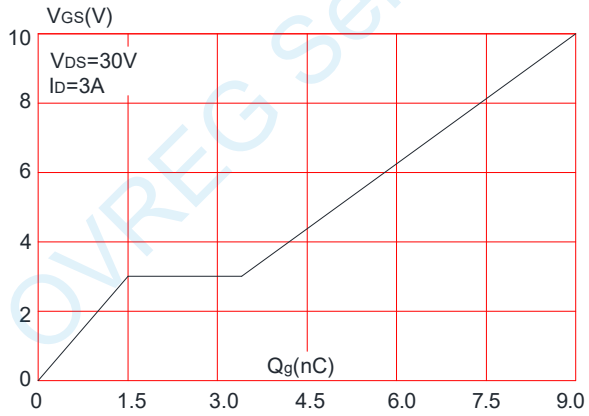
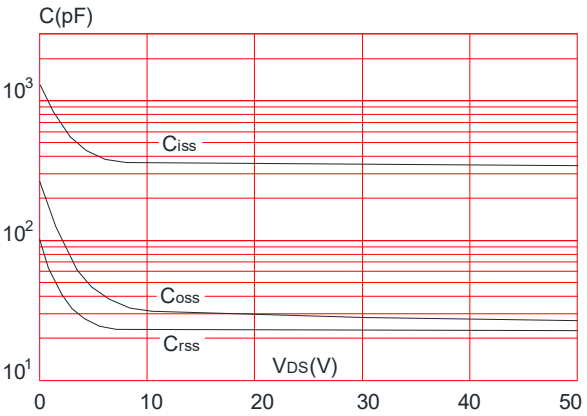


Figure 6: Capacitance Characteristics



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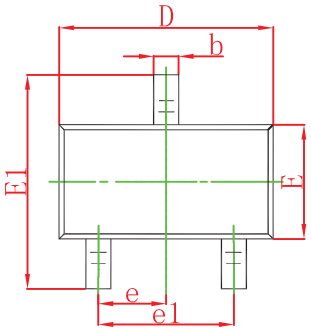
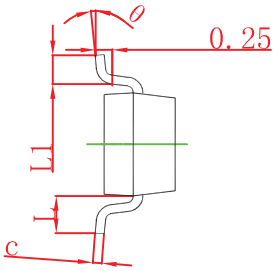
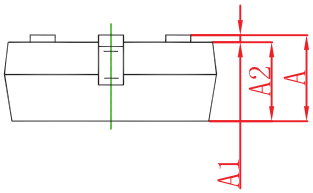
Package information

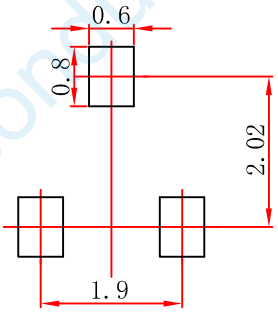






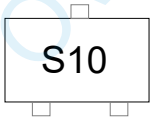
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVM60N85T	GREEN	T/R	7 inch	3k/reel	10reel= 30k/box	4boxes=120k/carton

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