

Single N-Channel, 60V, 200mA, MOSFET

Features

- ✧ High density cell design for Low $R_{DS(on)}$
- ✧ Voltage controlled small signal switch
- ✧ Rugged and reliable
- ✧ ESD protected Gate HBM 2.5kV

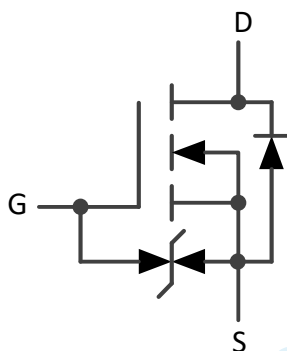
V_{DS} (V)	Typical $R_{DS(on)}$ (Ω)
60	1.3 @ $V_{GS}=10V$
	1.4 @ $V_{GS}=4.5V$

Applications

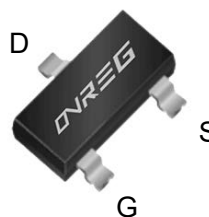
- ✧ DC/DC Converter
- ✧ Load Switch for Portable Devices
- ✧ Battery Switch

Mechanical Data

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



Circuit Diagram



SOT-323

Absolute Maximum Rating at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	200	mA
Power Dissipation	P_D	0.20	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

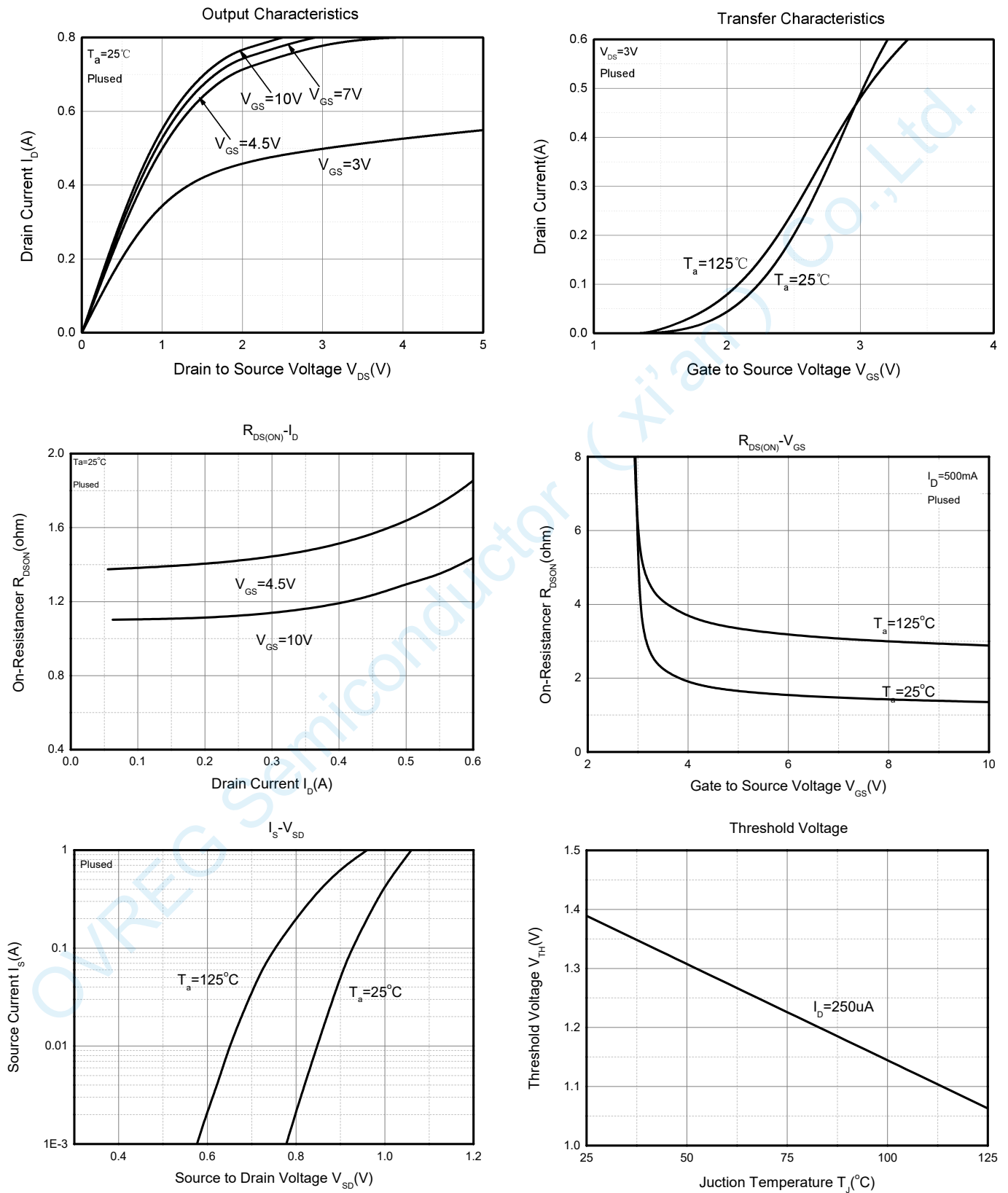
Electrical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS1}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 10	μA
	I_{GSS2}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 200	nA
	I_{GSS2}	$V_{GS} = \pm 5V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage*	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	2.5	V
Drain-source on-resistance*	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 400mA$		1.3	3.0	Ω
		$V_{GS} = 4.5V, I_D = 300mA$		1.4	4.0	
Recovered charge	Q_r	$V_{GS} = 0V, I_S = 300mA, V_R = 25V,$ $dI_S/dt = -100A/\mu S$		30		nC
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				5	
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{GEN} = 10V, V_{DS} = 30V,$ $R_G = 25\Omega, I_D = 200mA$		3.9		ns
Turn-off delay time	$t_{d(off)}$			15		
Reverse recovery Time	t_{rr}	$V_{GS} = 0V, I_S = 300mA, V_R = 25V,$ $dI_S/dt = -100A/\mu S$		30		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	$V_{GS} = 0V, I_S = 200mA$		0.82	1.5	V
GATE-SOURCE ZENER DIODE						
Gate-Source Breakdown Voltage	BV_{GSO}	$I_{GS} = \pm 1mA$ (Open Drain)	± 21.5		± 30	V

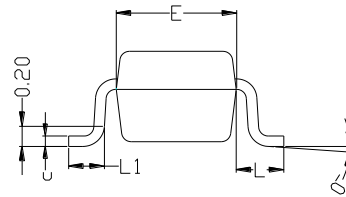
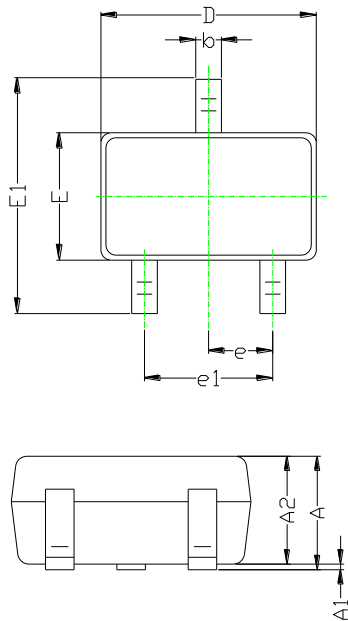
Notes:

*Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Typical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

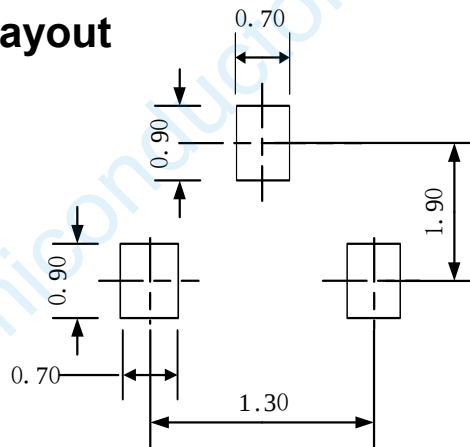


Package Information



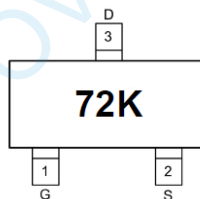
SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.800	1.100
A1	0.00	0.100
A2	0.800	1.000
b	0.200	0.400
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°

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
OVM6013ET3	GREEN	T/R	7 inch	3k/reel	10reel= 30k/box	4boxes=120k/carton