Single P-Channel, -20V, -660mA, Enhancement MOSFET

Features

- ✧ V_{DS} = -20 V
- ✧ Low R_{DS}(ON) trench technology
- ✧ Low thermal impedance
- ✧ Fast switching speed

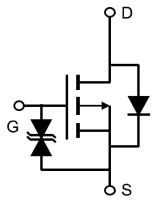
V_{DS} (V)	Typical $R_{DS(on)}$ (Ω)
-20	0.53@ V_{GS}=-4.5V
	0.73@ V_{GS}=-2.5V
	1.3@ V_{GS}=-1.8V

Applications

- ✧ DC/DC Converter
- ✧ Power supply converters circuit
- ✧ Load switch

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ RoHS/WEEE Compliant



Circuit Diagram



DFN1006-3L

Absolute Maximum Rating at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current	I_D	-660	mA
Power Dissipation	P_D	0.15	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

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Electrical Characteristics at T_A = 25 °C, unless otherwise specified

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	-20			V
$V_{GS(th)}$	Gate-Threshold Voltage*2	V_{DS}=V_{GS}, I_D=-250μA	-0.35	-0.45	-1.1	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V, V_{GS}=0V			-1.0	uA
I_{GSS}	Gate-Body Leakage Current	V_{GS} =±8V, V_{DS}=0V			±10	uA
$R_{DS(on)}$	Drain-Source On-Resistance*2	V_{GS}=-4.5V, I_D=-0.55A		530	640	mΩ
		V_{GS}=-2.5V, I_D=-0.45A		730	950	mΩ
		V_{GS}=-1.8V, I_D=-0.35A		1300	1950	mΩ
g_{FS}	Forward Transconductance	V_{DS} =-10V, I_D =-0.54A		1.2		S
V_{SD}	Diode Forward Voltage	I_S=-0.5A, V_{GS}=0V			-1.2	V
Dynamic Characteristics*4						
Ciss	Input Capacitance	V_{DS}=-10V,V_{GS}=0V, f=1MHz		58		pF
Coss	Output Capacitance			5.7		
Crss	Reverse Transfer Capacitance			4.4		
Switching Parameters *4						
td(on)	Turn-on Delay Time*3	V_{GS}=-10V, V_{DD}=-4.5V, I_D=-1.33A,R_{GEN}=3Ω		0.4		nS
Tr	Turn-on Rise Time*3			0.06		
td(off)	Turn-off Delay Time*3			0.02		
Tf	Turn-off Fall Time*3			0.8		

Notes:

*1. Surface mounted on FR4 board using the minimum recommended pad size.

*2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.

*3. Switching characteristics are independent of operating junction temperatures.

*4. Guaranteed by design, not subject to producting.

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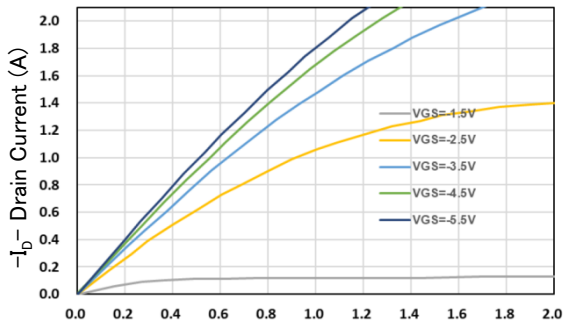
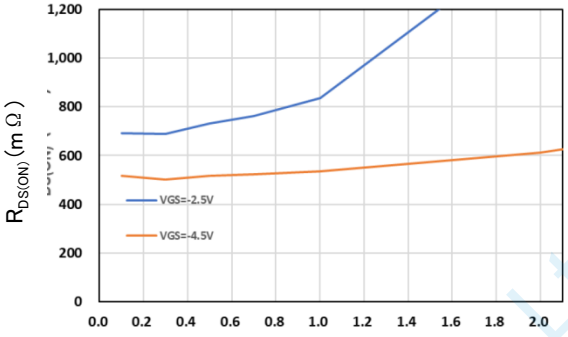
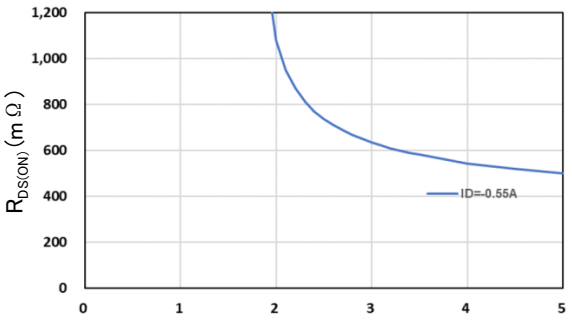
Typical Characteristics at T_A = 25 °C, unless otherwise specified



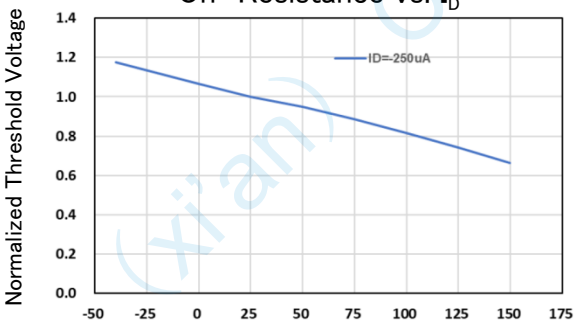
Output Characteristics



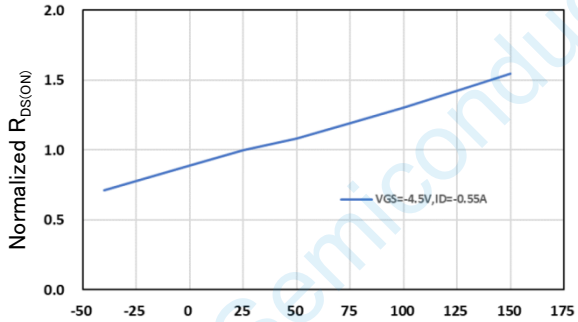
On—Resistance vs. I_D



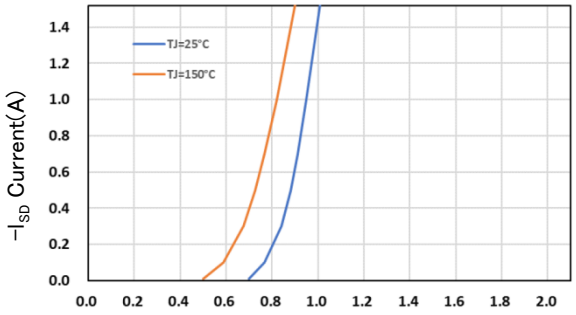
On—Resistance vs. V_{GS}



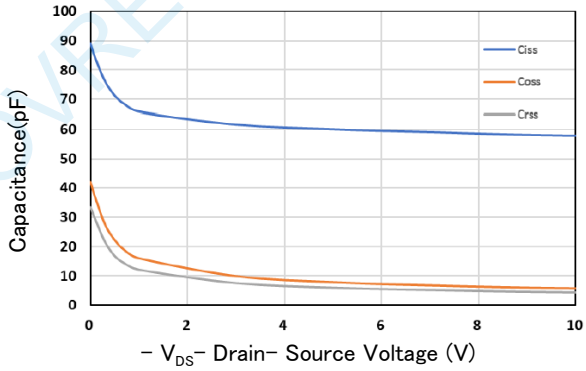
Gate Threshold Voltage



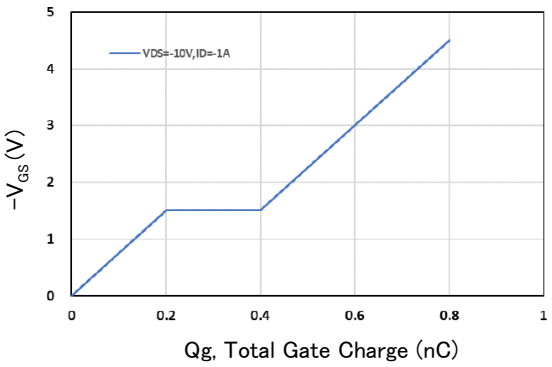
Drain-Source On Resistance



Source-Drain Diode Forward



Capacitance



Gate Charge Characteristics

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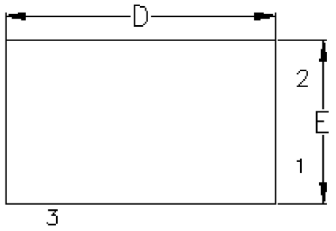
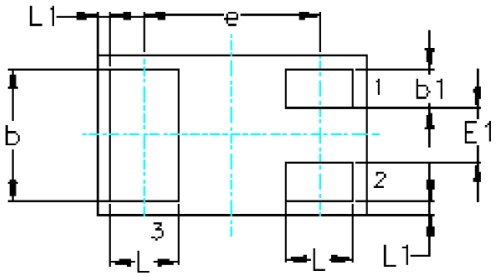
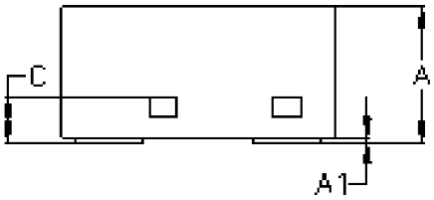
Package Information



TOP VIEW



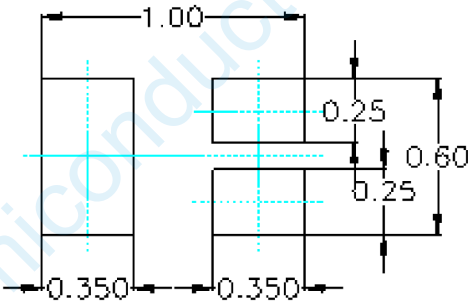
BOTTOM VIEW



SIDE VIEW

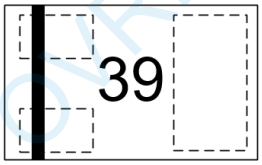
SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.025	0.05
b	0.45	0.50	0.55
b1	0.10	0.15	0.20
C	0.12	0.15	0.18
D	0.95	1.00	1.05
E	0.55	0.60	0.65
E1	0.15	0.20	0.25
e		0.65BSC	
L	0.20	0.25	0.30
L1		0.05 REF.	

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
OVM20P42D6	GREEN	T/R	7 inch	10k/reel	10reel= 100k/box	4boxes=400k/carton

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