

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

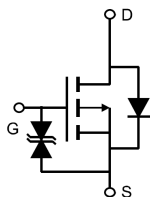
Features

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

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

Applications

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



Circuit Diagram

Mechanical Data

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



DFN1006-3L

Absolute Maximum Rating at $T_A = 25\text{ }^{\circ}\text{C}$, 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	$^{\circ}\text{C/W}$
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

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	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±8V, V _{DS} =0V			±10	μA
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:

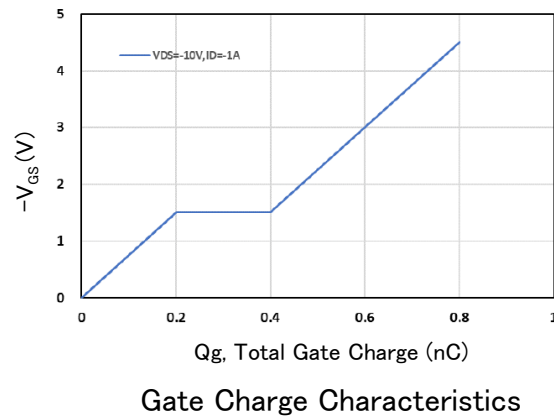
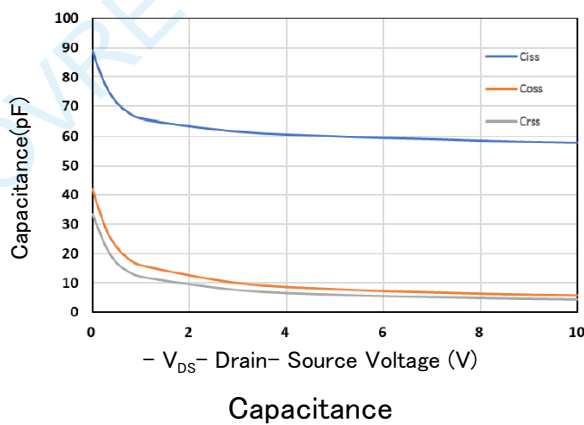
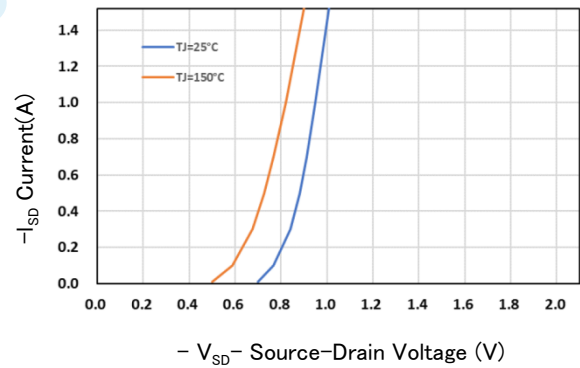
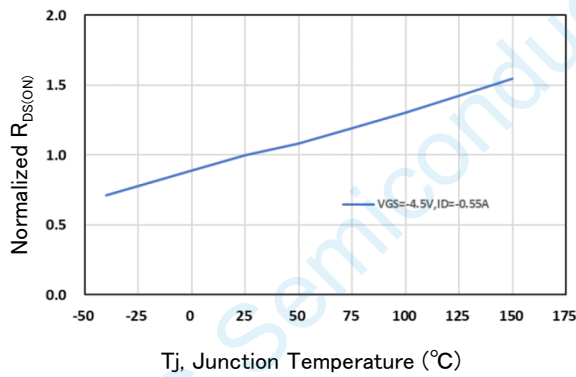
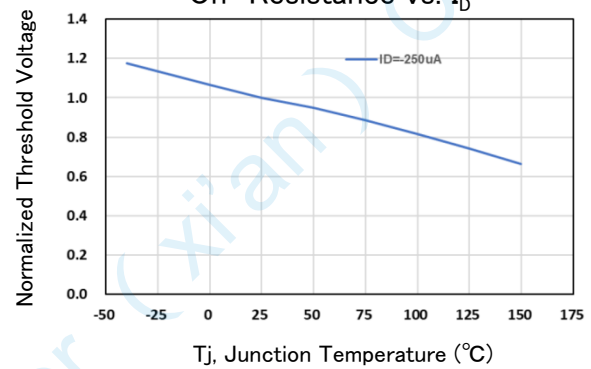
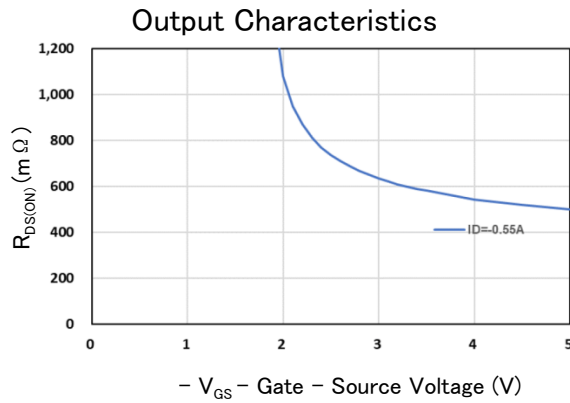
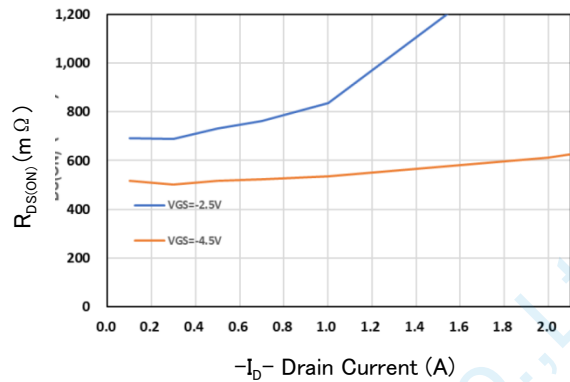
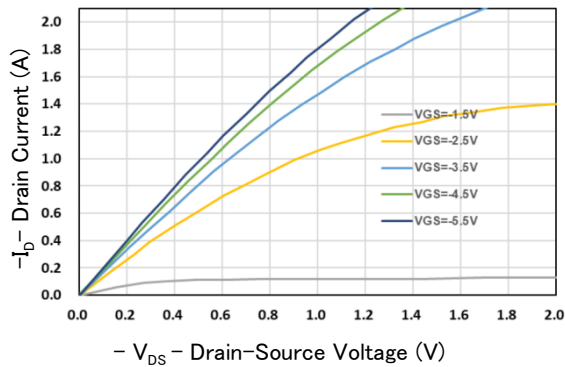
*1. Surface mounted on FR4 board using the minimum recommended pad size.

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

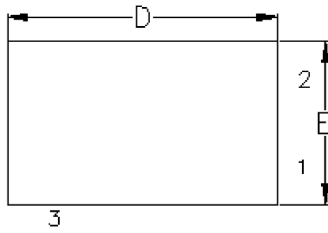
*3. Switching characteristics are independent of operating junction temperatures.

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

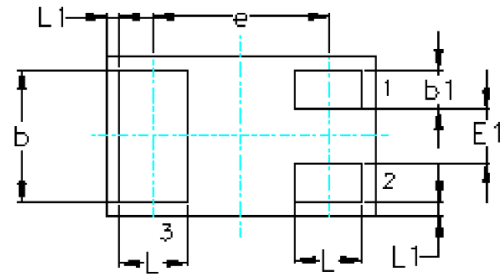
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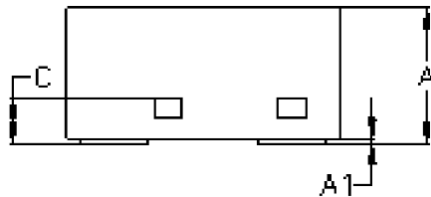
Package Information



TOP VIEW



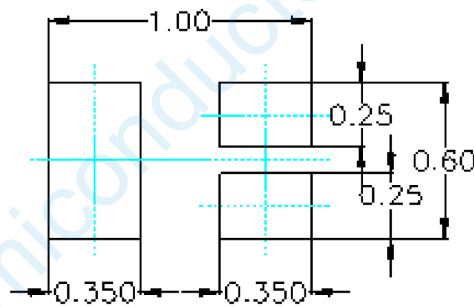
BOTTOM VIEW



SIDE VIEW

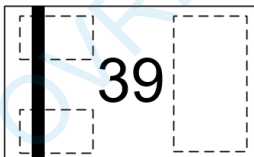
SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.025	0.05
b	0.45	0.50	0.55
b1	0.10	0.15	0.20
C	0.12	0.15	0.18
D	0.95	1.00	1.05
E	0.55	0.60	0.65
E1	0.15	0.20	0.25
e	0.65BSC		
L	0.20	0.25	0.30
L1	0.05 REF.		

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