

**SE4880**  
**N-Channel Enhancement Mode Field Effect Transistor**

Revision:A

**General Description**

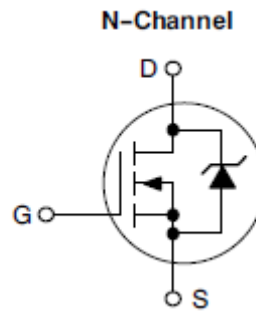
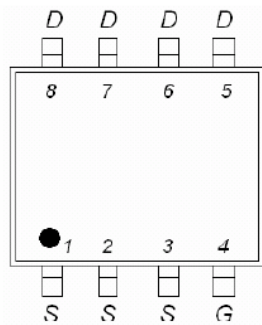
The SE4880 uses advanced trench technology to provide excellent  $R_{DS(ON)}$  and low gate charge .This device is suitable for use as a load switch or in PWM applications

**Features**

- Low  $R_{DS(on)}$  to Minimize Conduction Losses
- Low Capacitance to Minimize Driver Losses
- Optimized Gate Charge to Minimize Switching Losses
- Dual SO-8 Surface Mount Package Saves Board Space

**Pin configurations**

See Diagram below



**Absolute Maximum Ratings**

Parameter	Symbol	Rating	Units
Drain-Source Voltage	$V_{DS}$	25	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current (Note 1)	Continuous	13	A
	Pulsed	50	
Total Power Dissipation	$P_D$	2.5	W
Operating Junction Temperature Range	$T_J$	-55 to 150	$^{\circ}C$

Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF/ON CHARACTERISTICS (Note 2)</b>						
BVDSS	Drain-Source Breakdown Voltage	ID=250 μ A, VGS=0 V	25			V
IDSS	Zero Gate Voltage Drain Current	VDS=24 V, VGS=0 V			1	μ A
IGSS	Gate-Body leakage current	VDS=0 V, VGS=±20 V			±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS ID=-250 μ A	1	-	3	V
RDS(ON)	Static Drain-Source On-Resistance2	VGS=-10V, ID=13A	-	-	8.5	mΩ
		VGS=4.5V, ID=10A	-	-	15	
gFS	Forward Transconductance	VDs=15V, ID=10A		20		S
<b>DYNAMIC PARAMETERS</b>						
Ciss	Input Capacitance	VGS=0V, VDS=25V, f=1MHz	-	813	-	pF
Coss	Output Capacitance		-	516	-	pF
Crss	Reverse Transfer Capacitance		-	224	-	pF
TON	Turn-On Time	VDS =15V, ID= 1A, VGS = 10 V, RGEN = 6 Ω	-	9	-	ns
TOFF	Turn-Off Time		-	25	-	ns
Tr	Turn-on Rise Time		-	16	-	ns
Tf	Turn-on Fall Time		-	50	-	ns
Qg	Total Gate Charge	VDS=15V, ID=13A, VGS=5V		22.5	-	nC
Qgs	Gate-Source Charge			3.3		nC
Qgd	Gate-Drain Charge			15.4		nC
Qrr	BodyDiode Reverse Recovery Charge	IF=2.9A, di/dt=100A/μs		23	-	nC

### Typical Characteristics

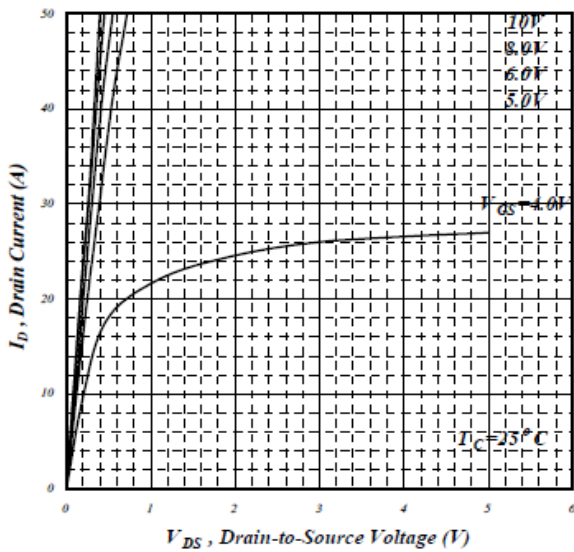


Fig 1. Typical Output Characteristics

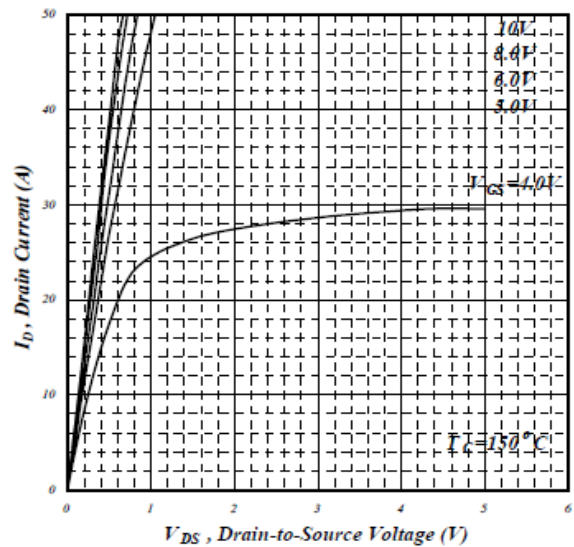


Fig 2. Typical Output Characteristics

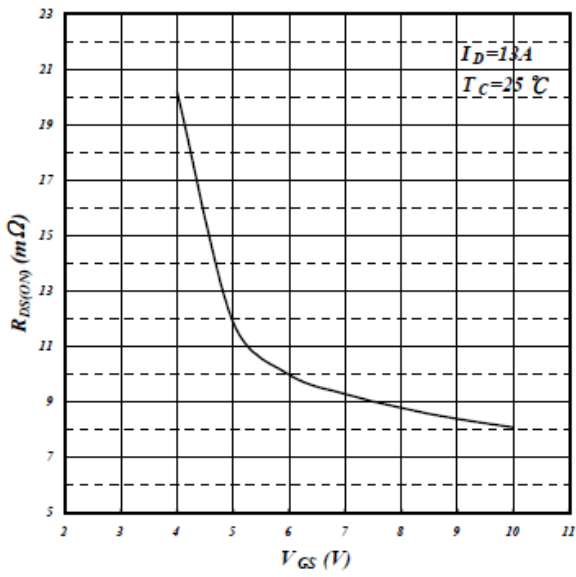


Fig 3. On-Resistance v.s. Gate Voltage

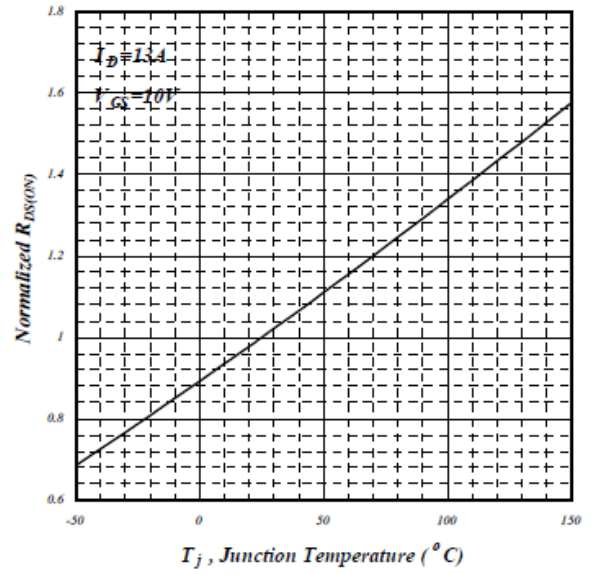


Fig 4. Normalized On-Resistance v.s. Junction Temperature

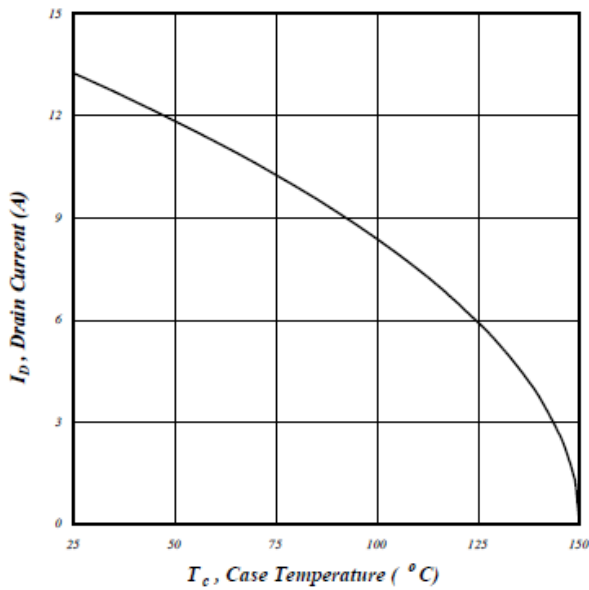


Fig 5. Maximum Drain Current v.s. Case Temperature

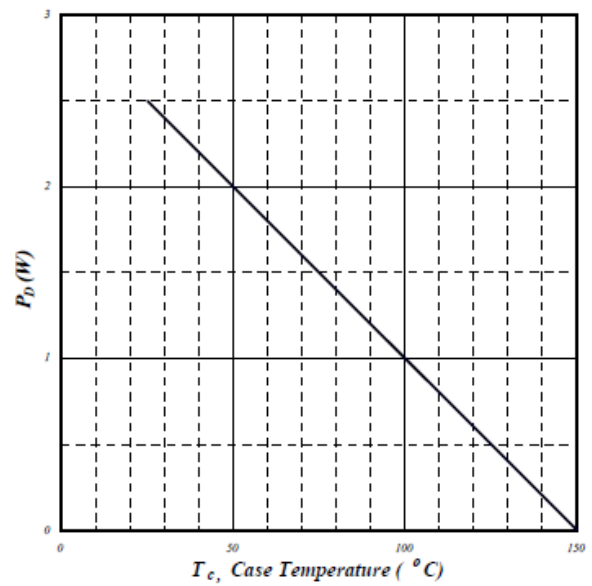


Fig 6. Typical Power Dissipation

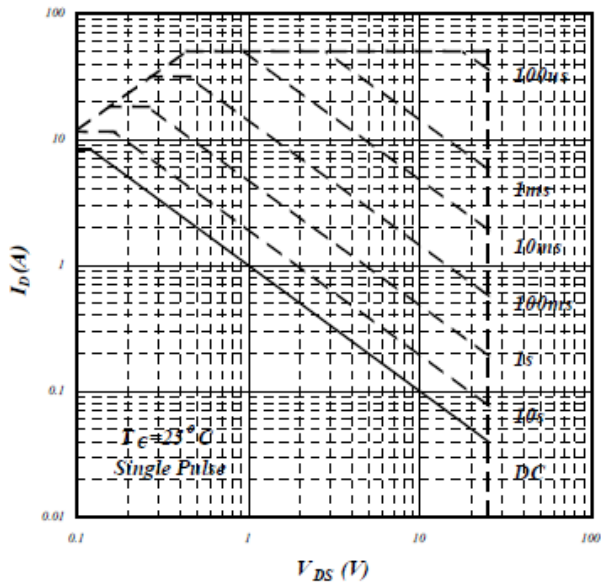


Fig 7. Maximum Safe Operating Area

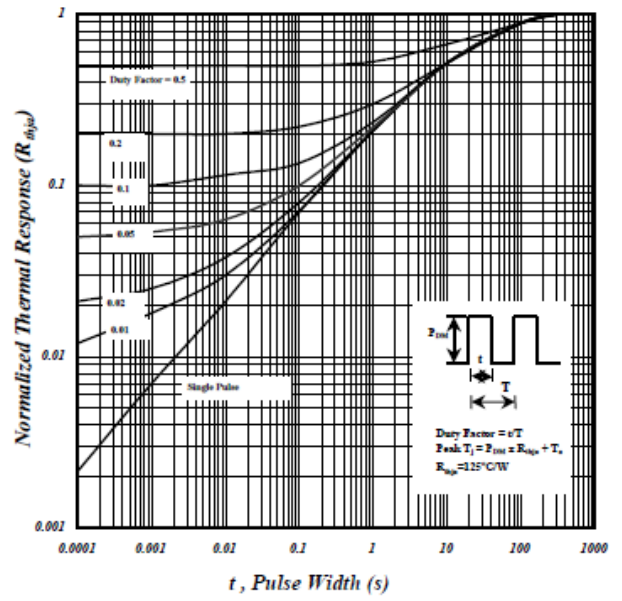


Fig 8. Effective Transient Thermal Impedance

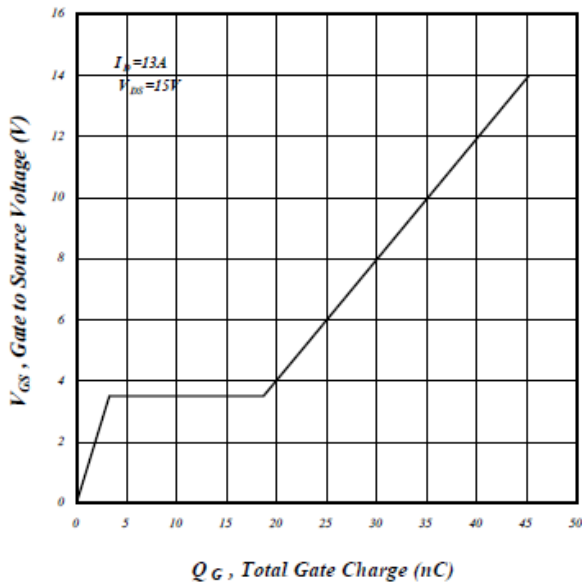


Fig 9. Gate Charge Characteristics

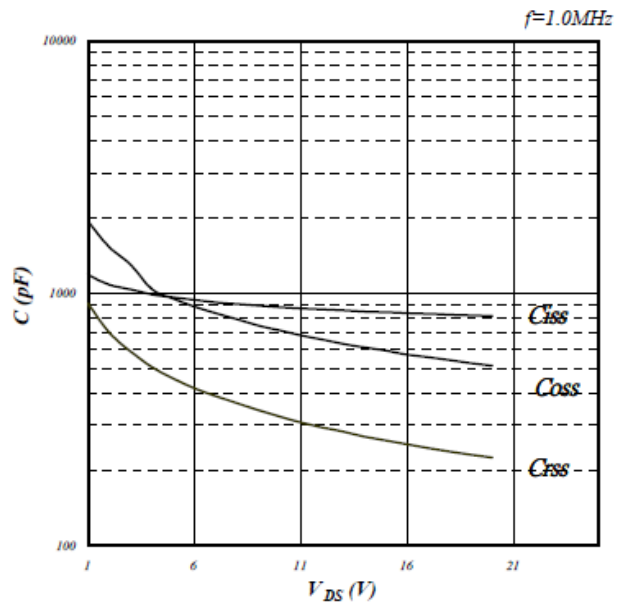


Fig 10. Typical Capacitance Characteristics

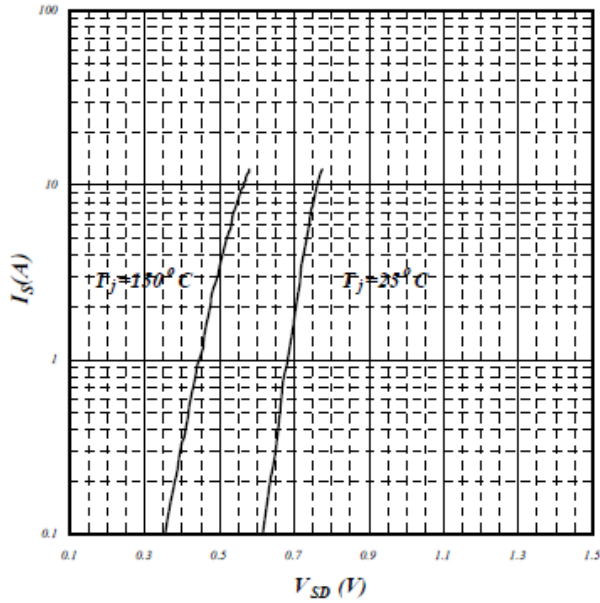


Fig 11. Forward Characteristic of Reverse Diode

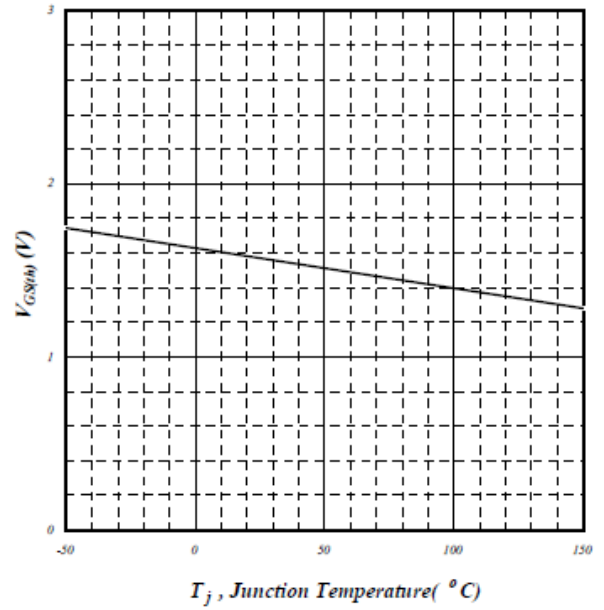
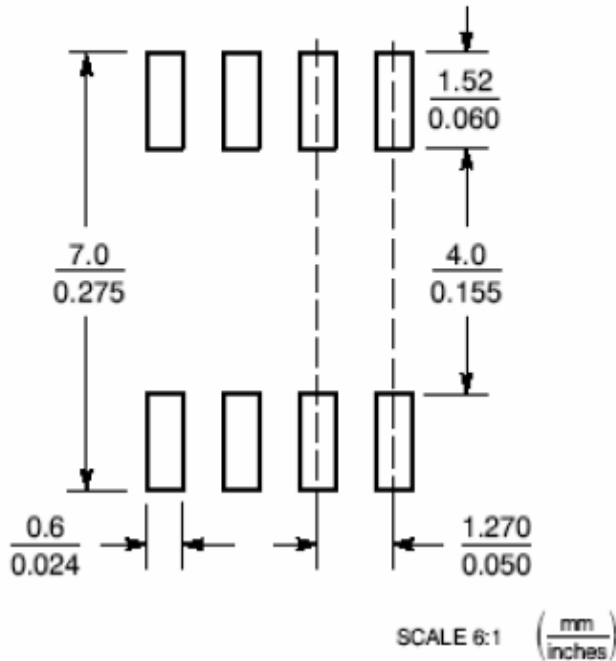


Fig 12. Gate Threshold Voltage v.s. Junction Temperature

⊕ 0.25 (0.010) Ⓜ Z Y Ⓢ X Ⓢ

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DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.197
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.020
G	1.27 BSC		0.050 BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.016	0.050
M	0°	8°	0°	8°
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244

**SE4880**

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