MSKSEMI 美森科
SEMICONDUCTOR

ESD   TVS   TSS   MOV   GDT   PLED

AON7264E-MS

Product specification

Description

The AON7264E-MS uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.
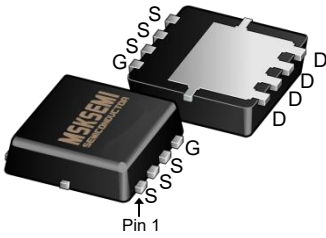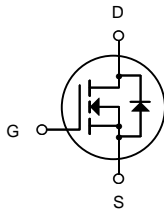
Features

- V_{DS} = 60V I_D = 40A
- $R_{DS(ON)}$ < 15mΩ @ V_{GS}= 10V

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Reference News

DFN3X3-8L	N-Channel MOSFET	Marking
		MSKSEMI N7264E N60

Absolute Maximum Ratings (T$_C$=25℃ unless otherwise noted)

Symbol	Parameter	Rating	Units
VDS	Drain-Source Voltage	60	V
VGS	Gate-Source Voltage	±20	V
I$_D$@T$_C$=25℃	Continuous Drain Current, V$_{GS}$ @ 10V[1]	40	A
I$_D$@T$_C$=100℃	Continuous Drain Current, V$_{GS}$ @ 10V[1]	20	A
IDM	Pulsed Drain Current[2]	150	A
EAS	Single Pulse Avalanche Energy[3]	36	mJ
P$_D$@T$_C$=25℃	Total Power Dissipation[4]	30	W
TSTG	Storage Temperature Range	-55 to 150	℃
T$_J$	Operating Junction Temperature Range	-55 to 150	℃
R$_{θ}$JA	Thermal Resistance Junction-ambient [1]	62	℃/W
R$_{θ}$JC	Thermal Resistance Junction-Case[1]	2.5	℃/W

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)DSS}$	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	1.6	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note3	V_{GS}=10V, I_D=20A	-	12	15	mΩ
		V_{GS}=4.5V, I_D=10A	-	15	20	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1.0MHz	-	930	-	pF
C_{oss}	Output Capacitance		-	230	-	pF
C_{rss}	Reverse Transfer Capacitance		-	8	-	pF
Q_g	Total Gate Charge	V_{DS}=30V, I_D=20A, V_{GS}=10V	-	22	-	nC
Q_{gs}	Gate-Source Charge		-	4.5	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	3.5	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=30V, I_D=20A, R_G=1.6Ω, V_{GS}=10V	-	4.5	-	ns
t_r	Turn-on Rise Time		-	2.7	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	13.8	-	ns
t_f	Turn-off Fall Time		-	2.7	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	40	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	150	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S=30A	-	-	1.2	V
t_{rr}	Body Diode Reverse Recovery Time	T_J=25℃, I_F=20A,dI/dt=100A/µs	-	18	-	ns
Q_{rr}	Body Diode Reverse Recovery Charge		-	12	-	nC

Notes:

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

2. EAS condition: T_J=25℃, V_{DD}=30V, V_G=10V, R_G=25Ω, L=0.5mH, I_{AS}=12A

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

Typical Performance Characteristics
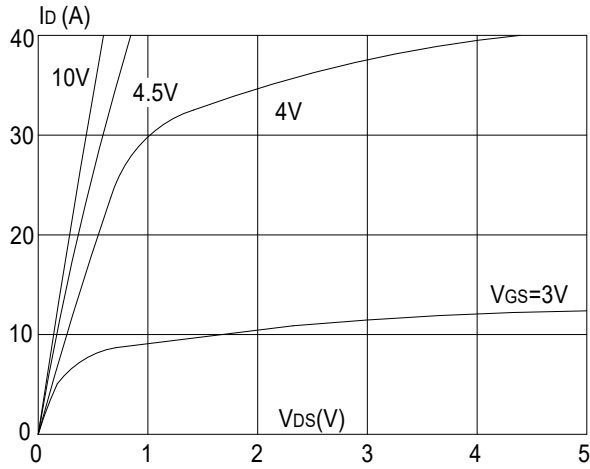
Figure1: Output Characteristics

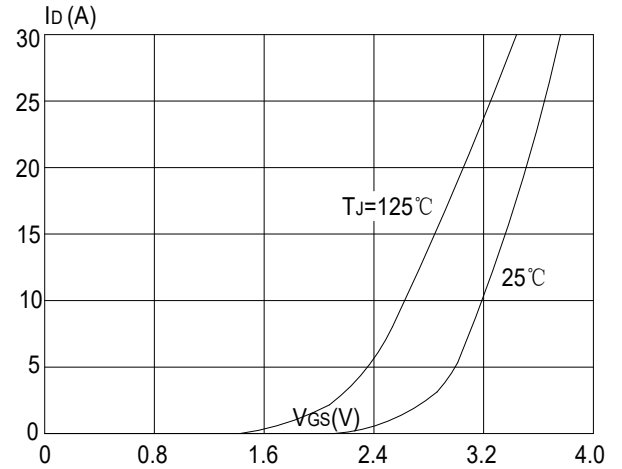**Figure 2:** Typical Transfer Characteristics

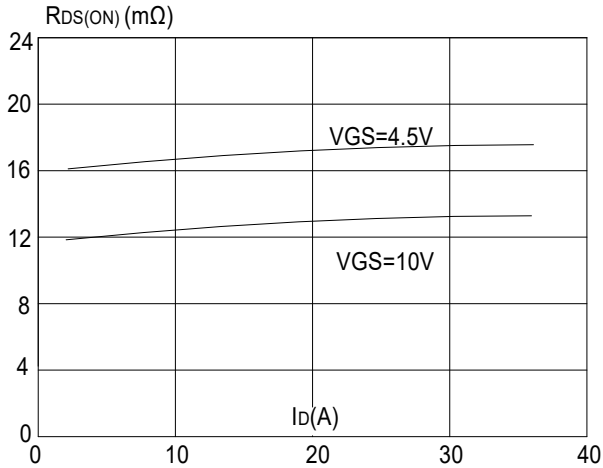**Figure 3:** On-resistance vs. Drain Current

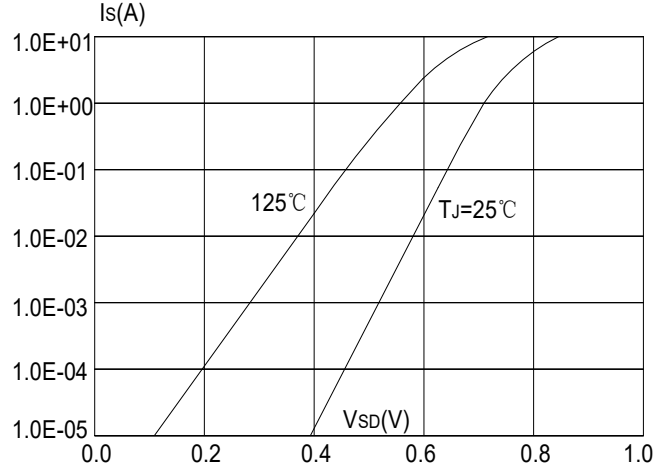**Figure 4:** Body Diode Characteristics

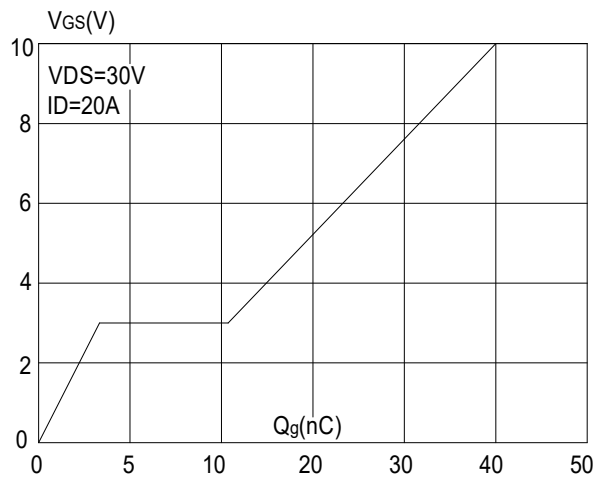**Figure 5:** Gate Charge Characteristics

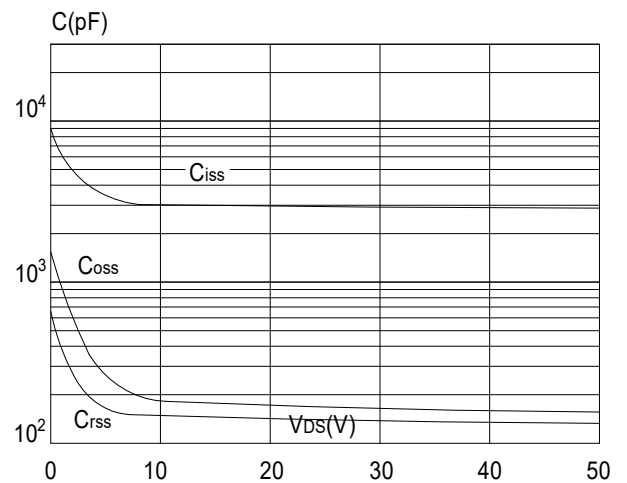**Figure 6:** Capacitance Characteristics

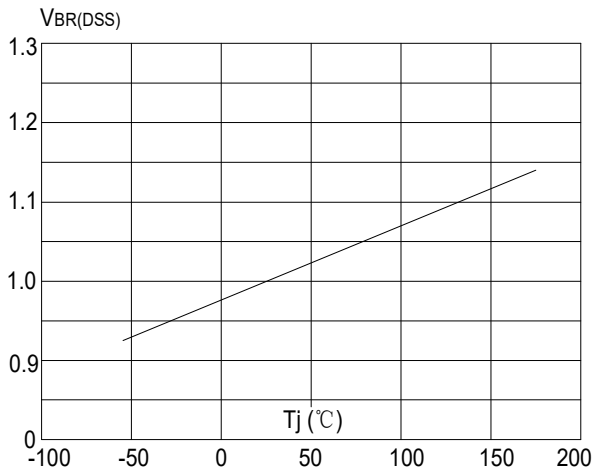**Figure 7:** Normalized Breakdown Voltage vs. Junction Temperature

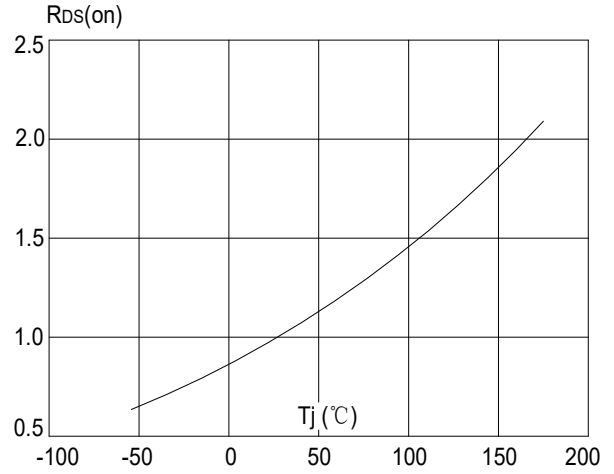**Figure 8:** Normalized on Resistance vs. Junction Temperature

Figure 9: Maximum Safe Operating Area
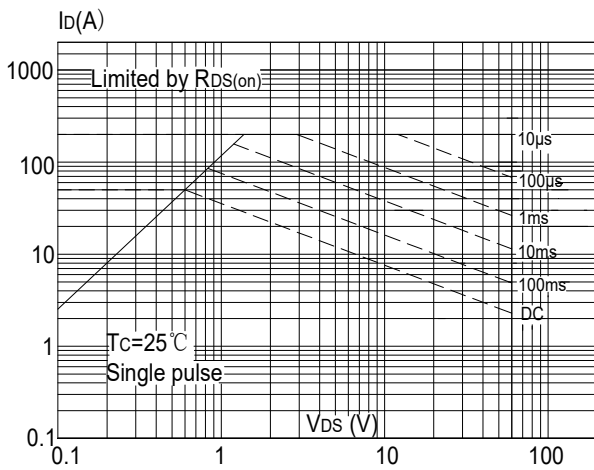

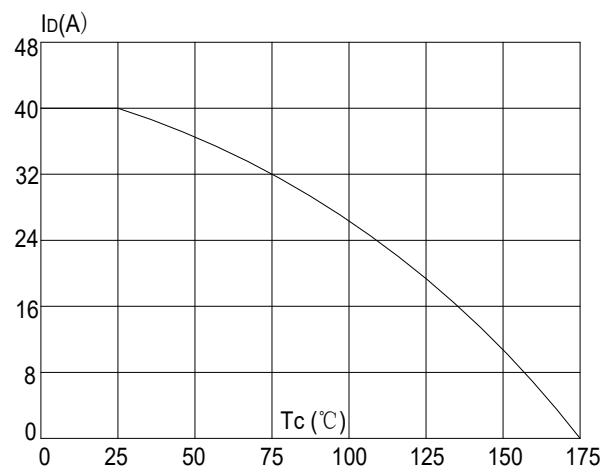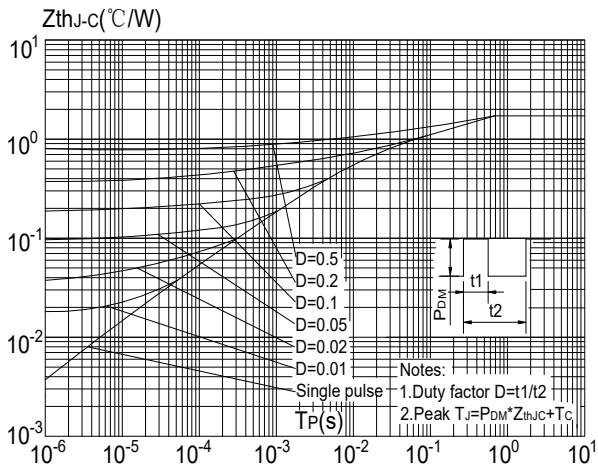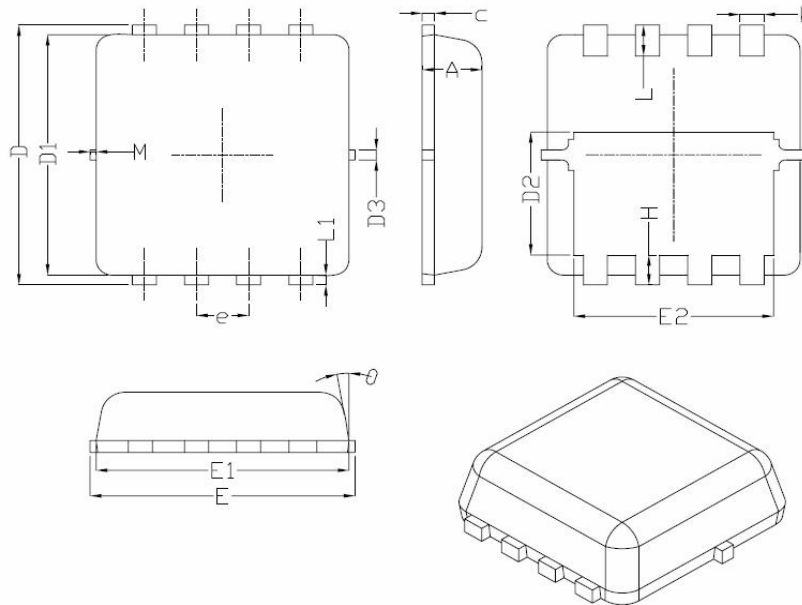**Figure 10:** Maximum Continuous Drain Current vs. Case Temperature

Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

Notes:
1. Duty factor D=t1/t2
2. Peak T_J=P_{DM}*Z_{thJC}+T_C

MSKSEMI
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DFN3X3-8L Package Information

Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.48	1.58	1.68
D3	-	0.13	-
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	-	0.13	-
M	*	*	0.15
θ		10°	12°

REEL SPECIFICATION

P/N	PKG	QTY
AON7264E-MS	DFN3X3-8L	5000

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