

FMOSV8808K-H

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FMOSV8808K-H

800mA 20V Dual N-Channel Enhancement Mode MOSFETS

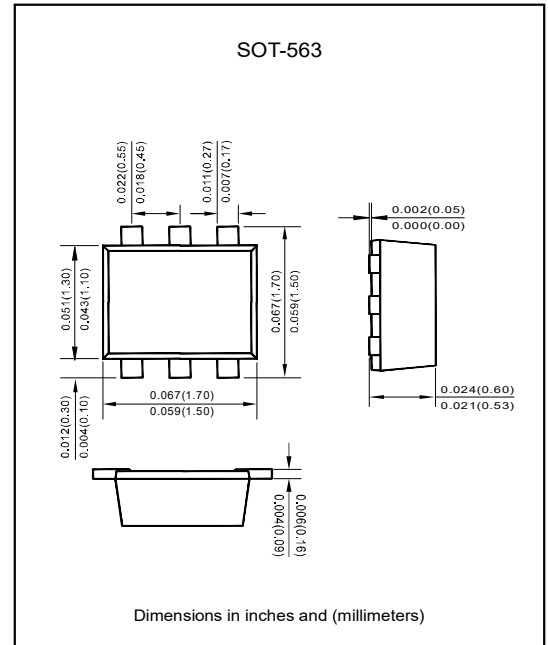
Features

- Super high dense cell trench design for low $R_{DS(ON)}$.
- Rugged and reliable.
- Surface mount package.
- ESD Protected.
- Lead-free parts meet RoHS requirements.
- Halogen-free (IEC61249-2-21).

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-563.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Mounting Position : Any.

Package outline



Maximum ratings (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-source voltage	V_{DS}	20	V
Gate-source voltage	V_{GS}	± 12	V
Continuous drain current (Note 1)	I_D	800	mA
Pulsed drain current (Note 2)	I_{DM}	3.2	A
Drain-source diode forward current (Note 1)	I_S	0.6	A
Power dissipation (Note 1)	P_D	500	mW
		300	
Operating Junction temperature	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$
Thermal resistance junction to air (Note 1)	$R_{\theta JA}$	250	$^\circ\text{C/W}$

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Electrical characteristics (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

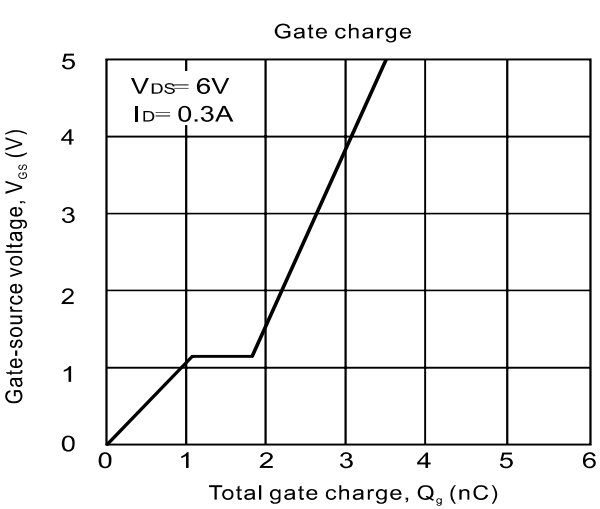
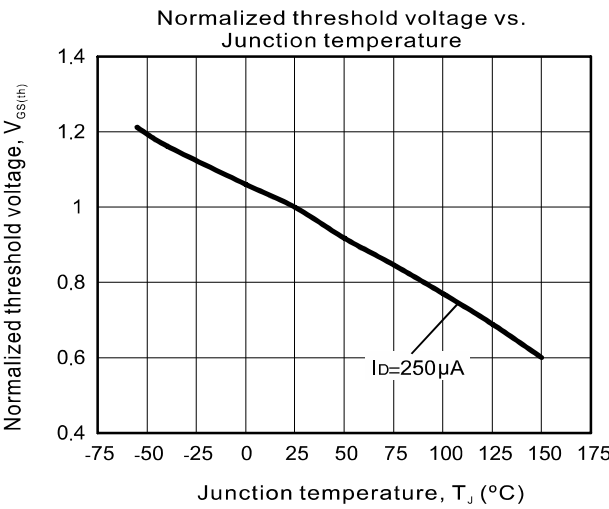
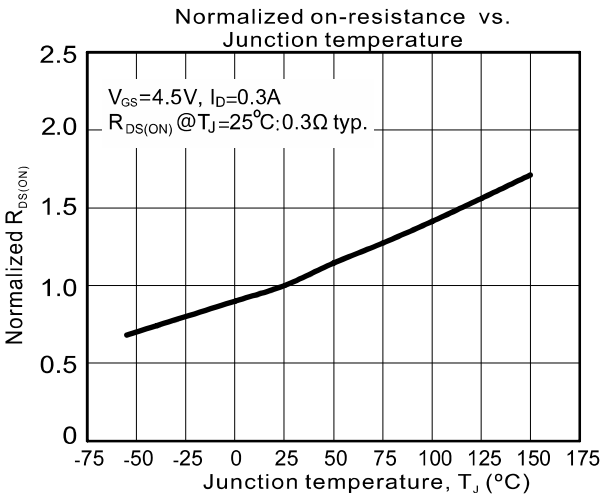
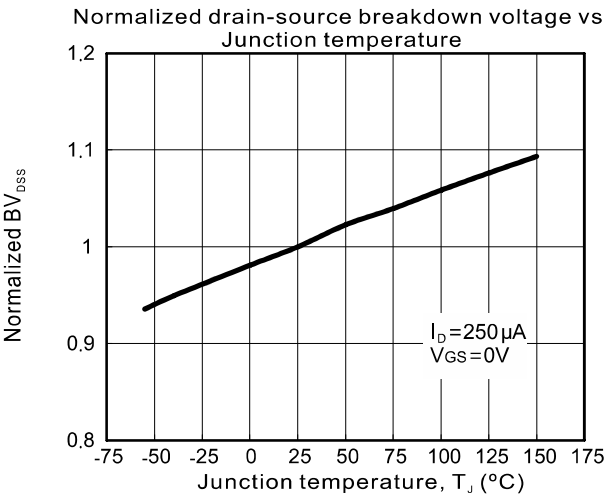
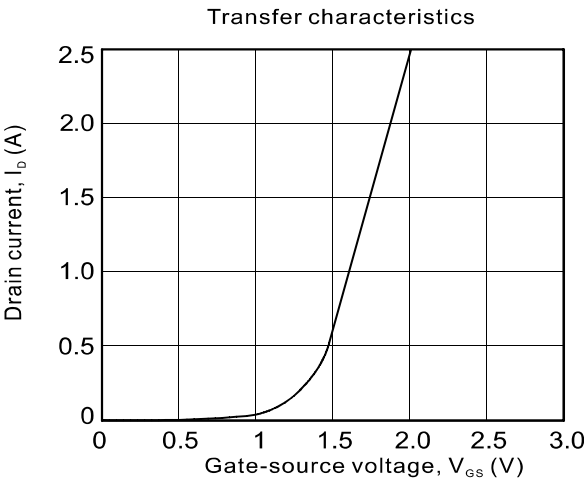
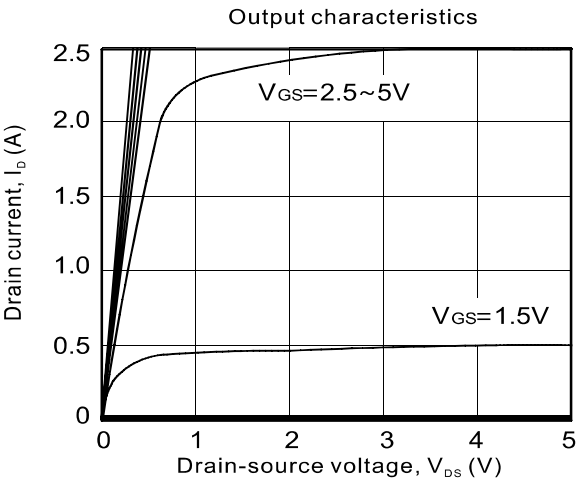
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
Drain-source leakage current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Gate-source leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 8V$			± 10	μA
On characteristics (Note 3)						
Gate threshold voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.7	1.0	V
Static drain-source on-resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=600mA$		300	500	m Ω
		$V_{GS}=2.5V, I_D=400mA$		600	800	
		$V_{GS}=1.8V, I_D=100mA$		700	900	
Forward transconductance	g_{FS}	$V_{DS}=5V, I_D=300mA$		3		S
Dynamic characteristics (Note 4)						
Input capacitance	C_{iss}	$V_{DS}=6V, V_{GS}=0V, f=1.0MHz$		42		pF
Output capacitance	C_{oss}			23		
Reverse transfer capacitance	C_{rss}			19		
Total gate charge	Q_g	$V_{DS}=6V, V_{GS}=4.5V, I_D=300mA$		3.4		nC
Gate-source charge	Q_{gs}			2.5		
Gate-drain charge	Q_{gd}			1.7		
Switching characteristics (Note 4)						
Turn-on delay time	$t_{d(on)}$	$V_{GEN}=4.5V, V_{DD}=6V, I_D=0.3A, R_L=6\Omega$ $R_G=6\Omega$		5	9	ns
Turn-on rise time	t_r			15	42	
Turn-off delay time	$t_{d(off)}$			25	28	
Turn-off fall time	t_f			7.6		
Source-drain diode characteristics (Note 3)						
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_S=0.3A$		0.7	1.2	V

Note :

1. Surface Mounted on FR4 Board , $t \leq 10\text{sec}$.
2. Pulse width limited by maximum junction temperature.
3. Pulse test pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Guaranteed by design , not subject to production testing .

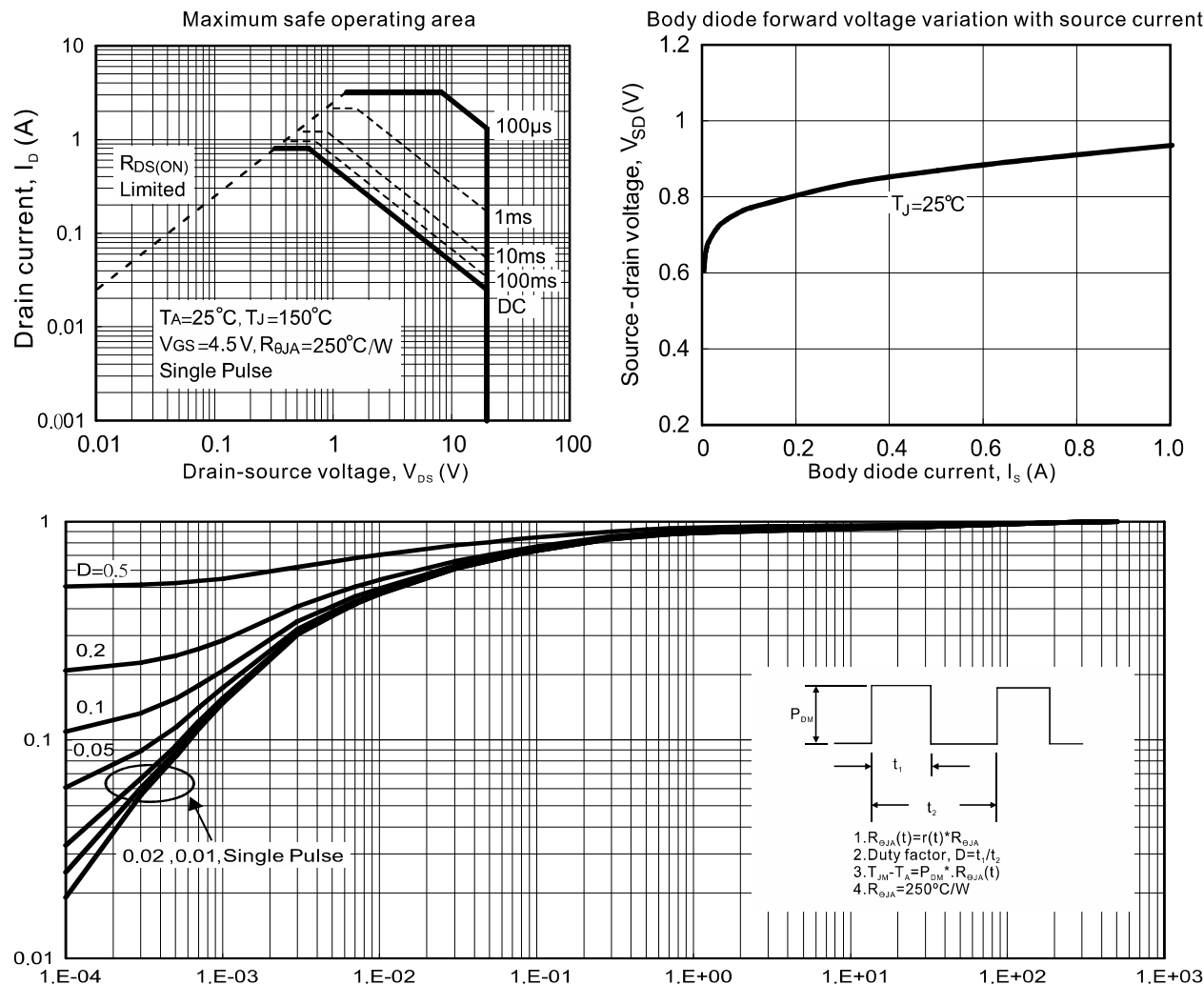
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Rating and characteristic curves



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Rating and characteristic curves



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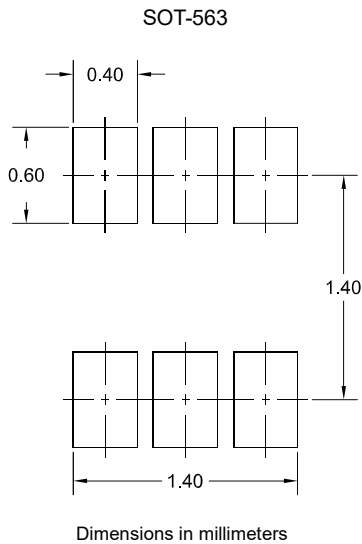
Pinning information

Pin	Simplified Outline	Symbol
Pin 1 Source1 Pin 2 Gate1 Pin 3 Drain2 Pin 4 Source2 Pin 5 Gate2 Pin 6 Drain1		

Marking

Type number	Marking code
FMOSV8808K	6303

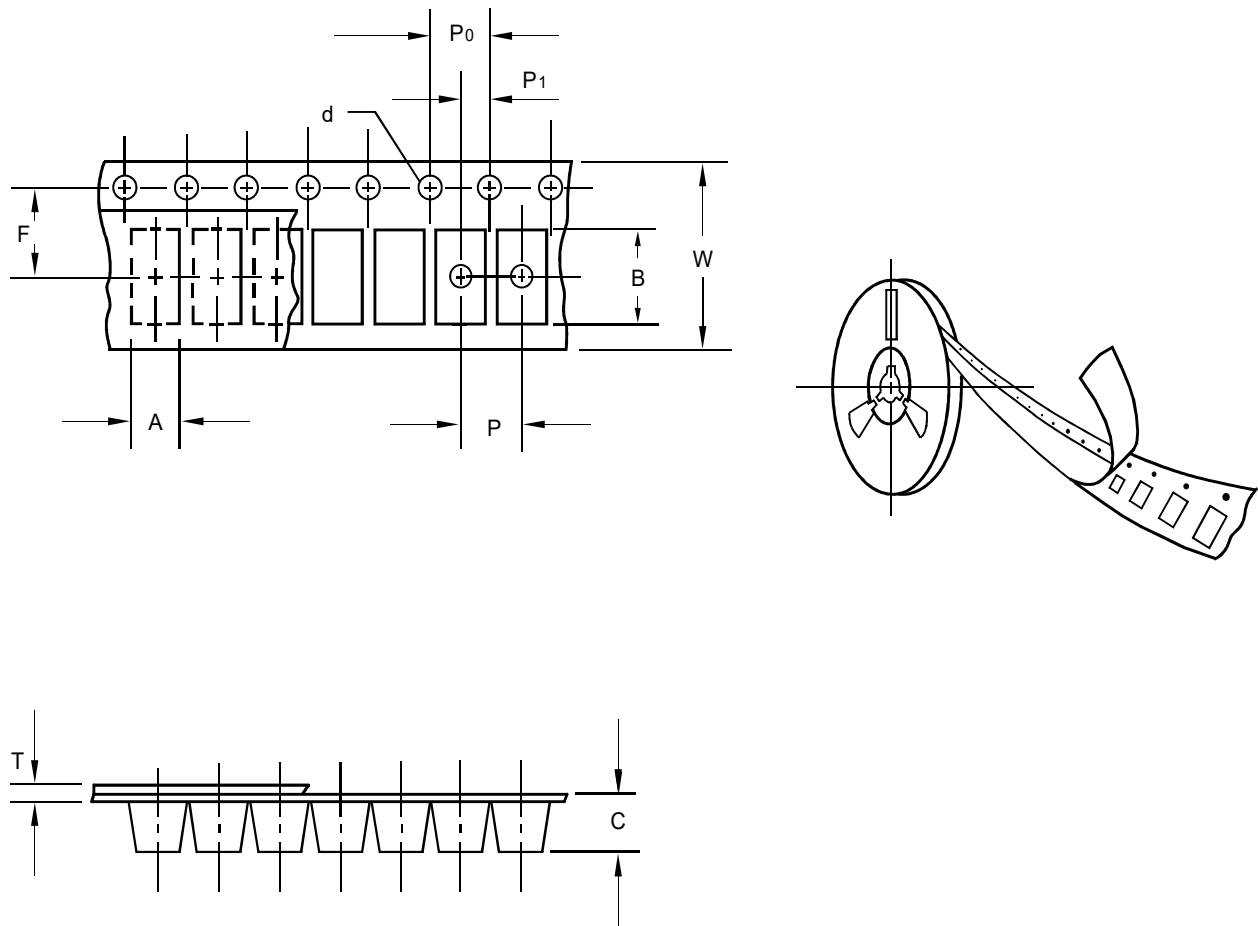
Suggested solder pad layout



- Note :
- 1. Controlling dimension : in millimeters.
 - 2. General tolerance : $\pm 0.05\text{mm}$.
 - 3. The pad layout is for reference purposes only.

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Packing information



unit:mm

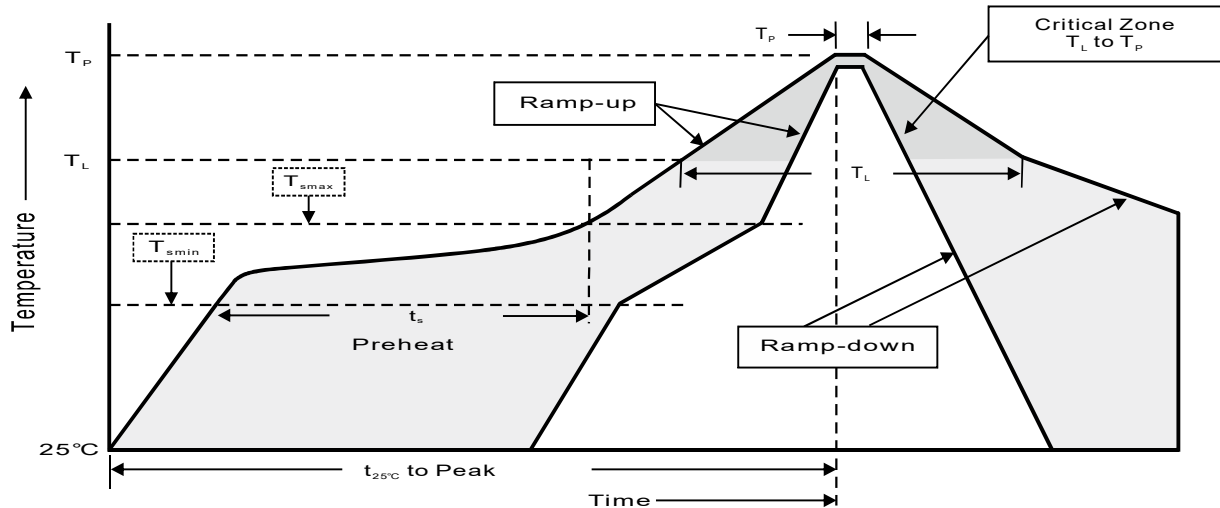
Item	Symbol	Tolerance	SOT-563
Carrier width	A	0.3	1.78
Carrier length	B	0.3	1.78
Carrier depth	C	0.3	0.69
Sprocket hole	d	0.1	1.55
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.5
Punch hole pitch	P	0.1	4.0
Sprocket hole pitch	P0	0.1	4.0
Embossment center	P1	0.1	2.0
Overall tape thickness	T	0.3	0.2
Tape width	W	0.5	8.0

Note:Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

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Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature = 5°C ~ 40°C Humidity = 55%, ±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile feature	Soldering condition
Average ramp-up rate (T_L to T_P)	< 3 °C/sec
Preheat - Temperature Min (T_{min}) - Temperature Max (T_{max}) - Time (Min to Max) (t_s)	150°C 200°C 60 ~ 120 sec
T_{max} to T_L - Ramp-up rate	< 3 °C/sec
Time maintained above : - Temperature (T_L) - Time (T_L)	217°C 60 ~ 260 sec
Peak temperature (T_P)	255 °C -0/+5°C
Time with 5°C of actual peak temperature (T_P)	10 ~30 sec
Ramp-down rate	< 6 °C/sec
Time 25°C to peak temperature	< 6 minutes