

### SOT23

#### Product Summary

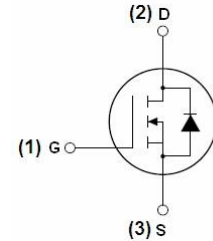
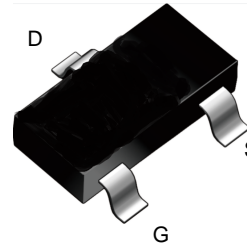
- $V_{DS}$  60 V
- $I_D$  3.0A
- $R_{DS(ON)}$ ( at  $V_{GS}=10V$ ) < 80 mohm
- $R_{DS(ON)}$ ( at  $V_{GS}=4.5V$ ) < 100 mohm

#### General Description

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low  $R_{DS(ON)}$

#### Applications

- DC-DC Converters
- Power management functions



#### Ordering Information (Example)

PREFERED P/N	PACKING	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
LGE03N06BF	SOT-23	080FN	3000	45000	180000	7" reel

#### Absolute Maximum Ratings ( $T_A=25^{\circ}C$ unless otherwise noted)

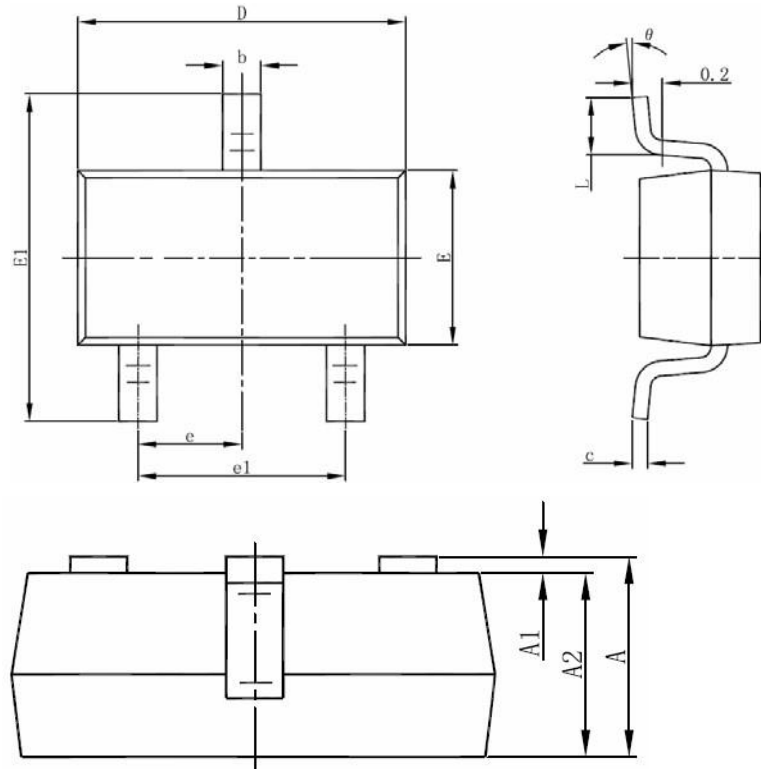
Parameter	Symbol	Limit	Unit
Drain-source Voltage	$V_{DS}$	60	V
Gate-source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	3.0	A
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	12	A
Total Power Dissipation @ $T_C=25^{\circ}C$	$P_D$	1.2	W
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{\theta JA}$	105	$^{\circ}C/W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^{\circ}C$

### ■ Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μA
Gate-Body Leakage Current	I <sub>GSS1</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V			±100	nA
	I <sub>GSS2</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> =0V			±50	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	1.1	1.7	2.3	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> =2A			80	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> =1.5A			100	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =2.0A, V <sub>GS</sub> =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I <sub>S</sub>				2.0	A
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHZ		330		pF
Output Capacitance	C <sub>oss</sub>			90		
Reverse Transfer Capacitance	C <sub>rss</sub>			17		
<b>Switching Parameters</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =30V, I <sub>D</sub> =2.0A		5.1		nC
Gate-Source Charge	Q <sub>gs</sub>			1.3		
Gate-Drain Charge	Q <sub>gd</sub>			1.7		
Turn-on Delay Time	t <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DD</sub> =30V, I <sub>D</sub> =1.5A, R <sub>L</sub> =1Ω R <sub>GEN</sub> =3Ω		13		ns
Turn-on Rise Time	t <sub>r</sub>			51		
Turn-off Delay Time	t <sub>D(off)</sub>			19		
Turn-off fall Time	t <sub>f</sub>			12		

- A. Pulse Test: Pulse Width ≤ 300μs, Duty cycle ≤ 2%.  
 B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

## ■ SOT23 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	0.090	0.100	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.800	3.000	0.111	0.119
E	1.200	1.400	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°

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