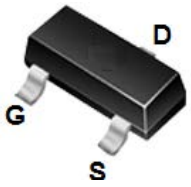
LGE02N06C

N-Channel Enhancement Mode MOSFET

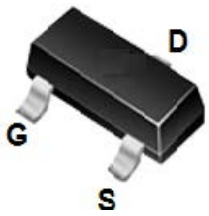
Features

- Low On-Resistance
- Low threshold
- Fast switching speed
- Low gate drive



LGE02N06C

SOT-23

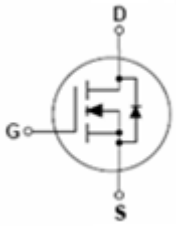


LGE02N06C-3L

SOT-23-3L

Typical Applications

- Motor control
- Disconnect switches
- DC-DC converters
- Power management functions



Mechanical Data

- Case: SOT-23, SOT-23-3L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Maximum Ratings (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	60	V
Gate-to-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	8	A

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Thermal Characteristics

Parameter		Symbol	Value	Unit
Power Dissipation	SOT-23	P_D	0.35	W
	SOT-23-3L		0.35	
Thermal Resistance Junction-to-Air	SOT-23	$R_{\theta JA}$	357	°C/W
	SOT-23-3L		357	
Thermal Resistance Junction-to-Lead	SOT-23	$R_{\theta JL}$	214	°C/W
	SOT-23-3L		214	
Thermal Resistance Junction-to-Case	SOT-23	$R_{\theta JC}$	180	°C/W
	SOT-23-3L		180	
Operating Junction Temperature Range		T_J	-55 ~ +150	°C
Storage Temperature Range		T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{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	-	-	1000	nA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
On Characteristics *1						
$R_{DS(ON)}$	Static Drain-Source On-resistance	V_{GS} = 10V, I_D = 2A	-	-	115	mΩ
		V_{GS} = 4.5V, I_D = 2A	-	-	140	
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250uA	0.8	1	2	V
g_{FS}	Forward Transconductance	V_{DS} = 15V, I_D = 2A	-	4.9	-	S
Dynamic Characteristics						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = 40V f = 1.0MHz	-	520	-	pF
C_{OSS}	Output Capacitance		-	26	-	
C_{RSS}	Reverse Transfer Capacitance		-	15	-	
Q_G	Total Gate-Charge	V_{GS} = 10V V_{DS} = 30V I_D = 2A	-	15.5	-	nC
Q_{GS}	Gate to Source Charge		-	1.6	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	1.7	-	
$t_{d(ON)}$	Turn-on Delay Time	V_{GS} = 10V V_{DD} = 30V I_D = 2A R_G = 6Ω	-	1.95	-	ns
t_r	Turn-on Rise Time		-	3.5	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	8.2	-	
t_f	Turn-Off Fall Time		-	4.6	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_S = 2A,V_{GS} = 10V	-	-	2	V

Note 1: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

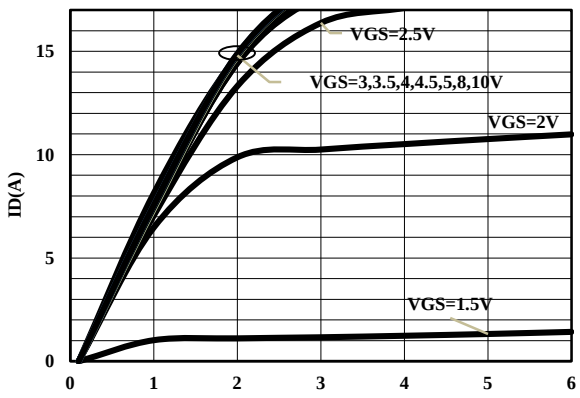

Fig.1- On-Region Characteristics

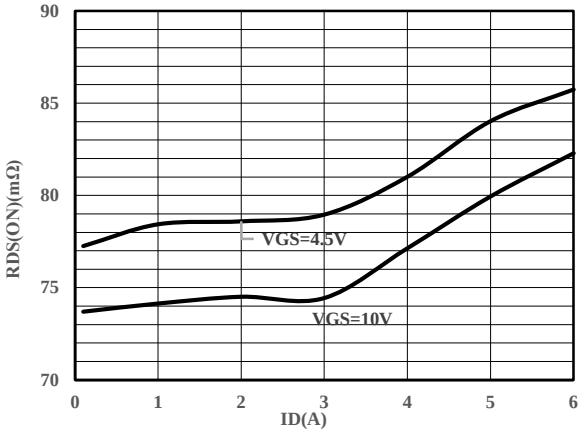

Fig.2-On-Resistance vs. Drain Current and Gate Voltage

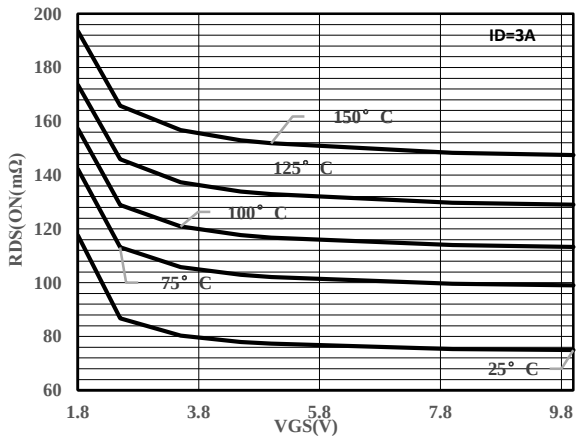

Fig.3-On-Resistance vs. Gate-Source Voltage

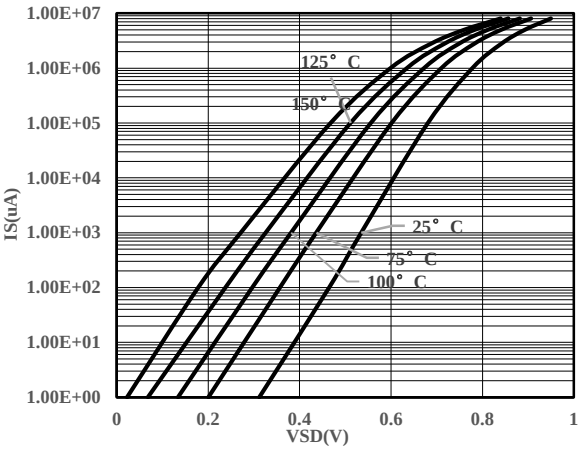

Fig.4- Body-Diode Characteristics

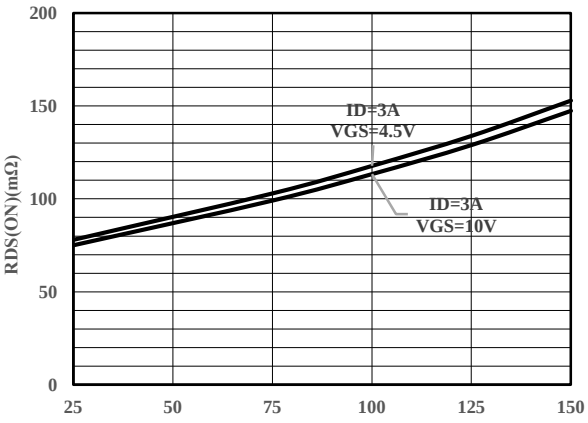

Fig.5-On-Resistance vs. Junction Temperature

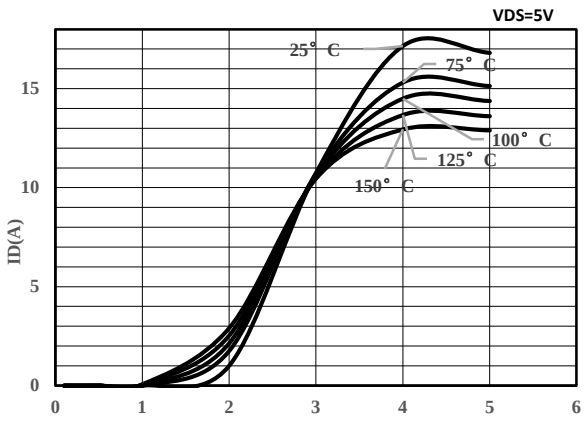

Fig.6-Transfer Characteristics

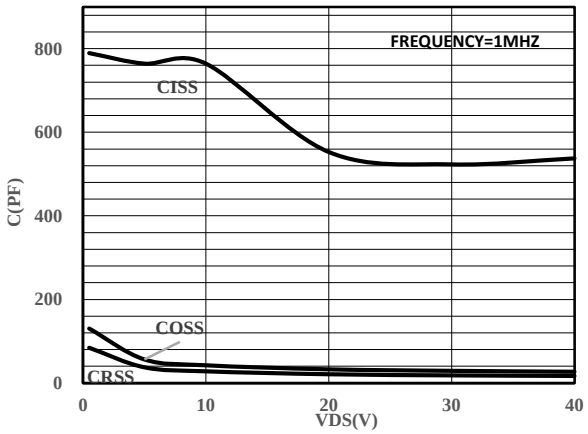

Fig.7-Capacitance Characteristics

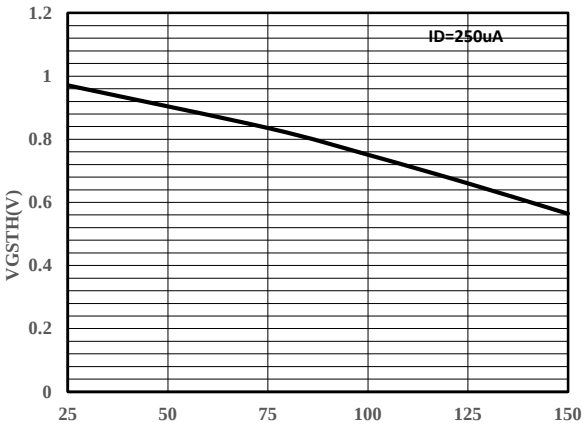

Fig.8- Gate Voltage vs. Junction Temperature

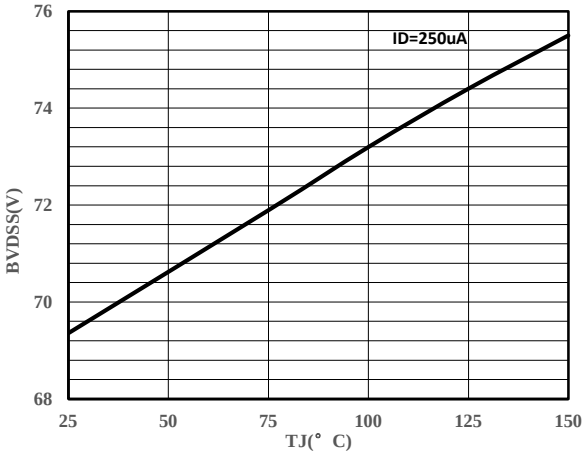

Fig.9- Drain-Source vs. Junction Temperature

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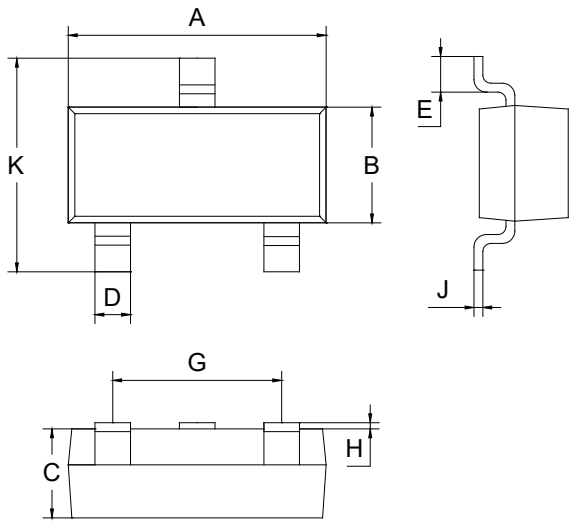
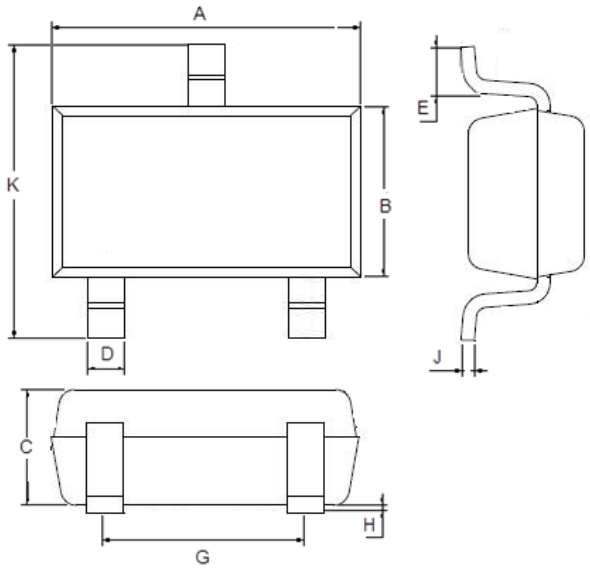
Package Outline Dimensions (Unit: mm)



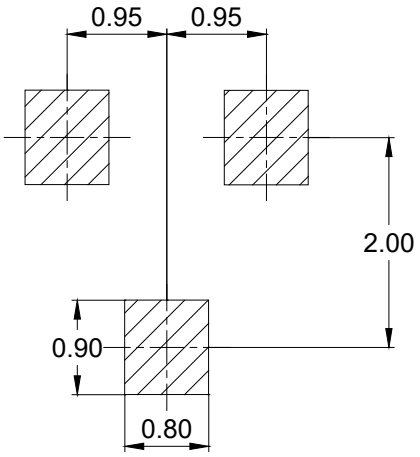
SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60



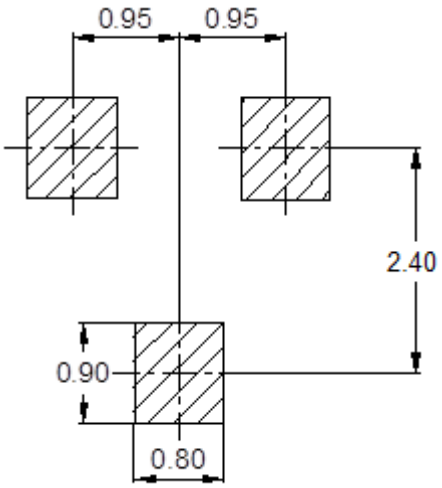
SOT-23-3L		
Dimension	**Min.**	**Max.**
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

SOT-23



SOT-23-3L



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
LGE02N06C	SOT-23	3000pcs / Tape & Reel	02N06
LGE02N06C-3L	SOT-23-3L	3000pcs / Tape & Reel	02N06