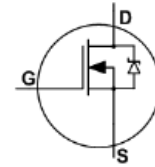




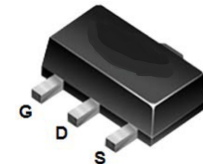
Features

- Depletion mode (Normally On)
- Proprietary advanced planar technology
- Low leakage Current



Applications

- Transient protect
- Converters



Mechanical Data

- Case: SOT-89
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

SOT-89

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
LGE4022	SOT-89	1000 pcs / Tape & Reel	4022

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage *1	V _{DSX}	400	V
Drain-to-Gate Voltage *1	V _{DGX}	400	V
Gate-to-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	0.2	A
Pulsed Drain Current *2	I _{DM}	0.8	A
Gate Source ESD *3	V _{ESD}	3000	V
Source to Gate ESD *3		3000	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	1	W
Thermal Resistance Junction-to-Case	R _{θJC}	125	°C/W
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C



Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
B _{VDSX}	Drain-to-Source Breakdown Voltage	V _{GS} = -5V, I _D = 250μA	400	-	-	V
I _{D(OFF)}	Drain-to-Source Leakage Current	V _{DS} = 400V, V _{GS} = -5V	-	-	1	μA
		V _{DS} = 400V, V _{GS} = -5V, T _J = 125°C	-	-	1	mA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±5	μA
On Characteristics *4						
I _{DSS}	Saturated Drain-to-Source Current	V _{GS} = 0V, V _{DS} = 25V	0.2	-	-	A
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = 10V, I _D = 200mA	-	-	23	Ω
		V _{GS} = 0V, I _D = 200mA	-	-	25	Ω
V _{GS(OFF)}	Gate-to-Source Cut-off Voltage	V _{DS} = 3V, I _D = 8μA	-3.3	-	-1.5	V
g _{fs}	Forward Transconductance	V _{DS} = 10V, I _D = 200mA	-	193	-	mS
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = -5V V _{DS} = 25V f = 1.0MHz	-	103.2	-	pF
C _{OSS}	Output Capacitance		-	17.7	-	
C _{RSS}	Reverse Transfer Capacitance		-	5.2	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DD} = 100V V _{GS} = -5V~5V R _G = 10Ω I _D = 200mA	-	6.6	-	ns
t _r	Turn-on Rise Time		-	9.2	-	
t _{d(OFF)}	Turn-Off Delay Time		-	18.8	-	
t _f	Turn-Off Fall Time		-	356	-	
Q _G	Total Gate-Charge	V _{DD} = 100V V _{GS} = -5V~5V I _D = 200mA	-	359.6	-	nC
Q _{GS}	Gate to Source Charge		-	61.6	-	
Q _{GD}	Gate to Drain (Miller) Charge		-	130	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *4	I _{SD} = 200mA, V _{GS} = -10V	-	-	1.5	V

Notes:

- T_J = 25~150°C
- Repetitive rating, pulse width limited by maximum junction temperature
- The test is based on JEDEC EIA/JESD22-A114(HBM)
- Pulse width ≤ 380μs; duty cycle ≤ 2%



Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

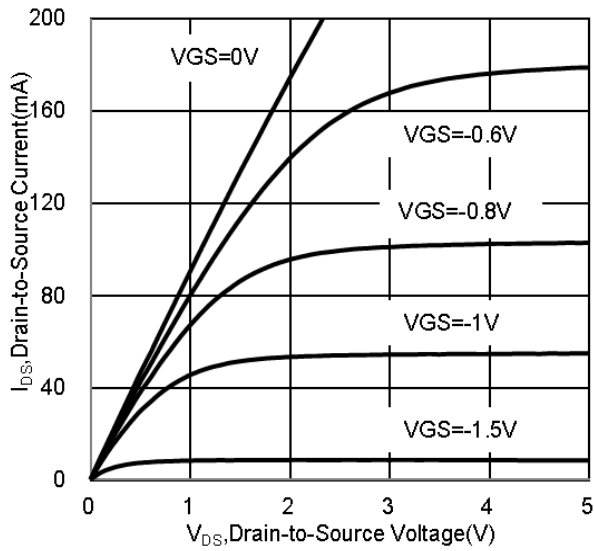


Fig 1 On-Region Characteristics

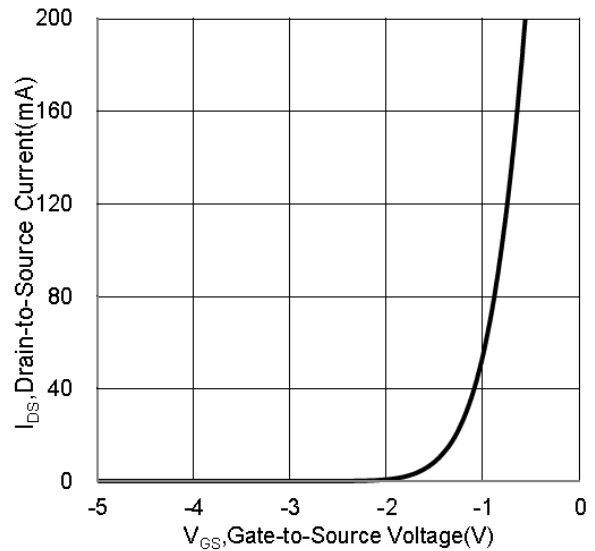


Fig 2 Transfer Characteristics

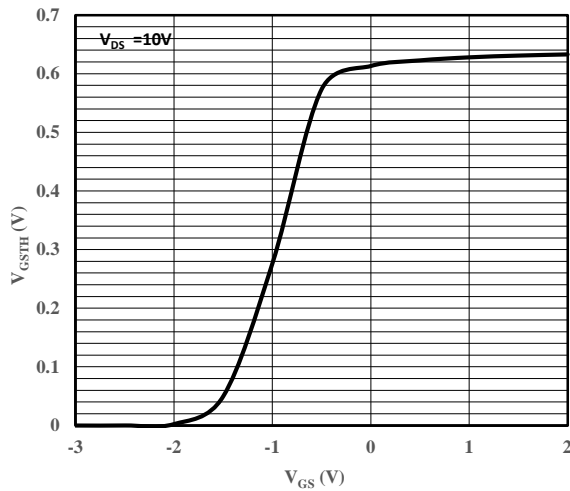


Fig 3 Transfer Characteristics

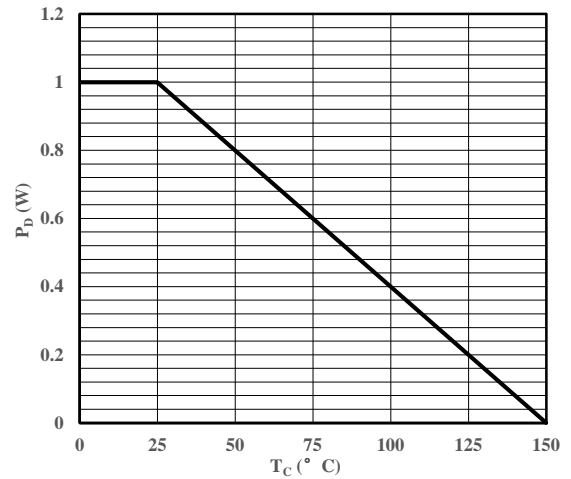
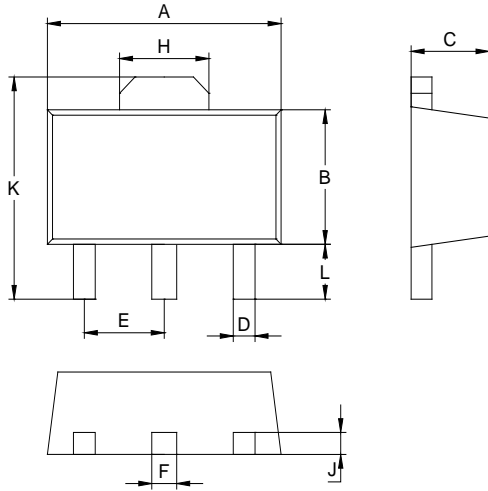


Fig 4 Power dissipation vs temp.



Package Outline Dimensions (Unit: mm)



SOT-89		
Dimension	Min.	Max.
A	4.30	4.70
B	2.25	2.65
C	1.30	1.70
D	0.30	0.50
E	1.40	1.60
F	0.38	0.58
H	1.60	1.80
J	0.30	0.50
L	0.90	1.10
K	3.95	4.35

Mounting Pad Layout (Unit: mm)

SOT-89

