

GSM3400

30V N-Channel Enhancement Mode MOSFET

Product Description

GSM3400, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge. These devices are particularly suited for low voltage power management, and low in-line power loss are needed in commercial industrial surface mount applications.

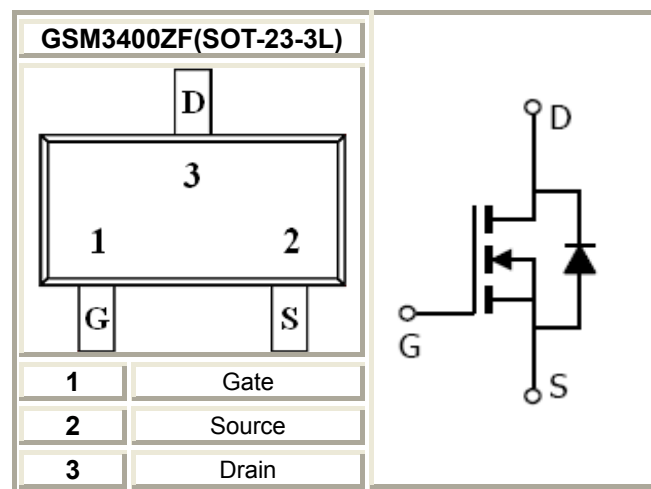
Features

- 30V/4.0A, $R_{DS(ON)}=48m\Omega@V_{GS}=10V$
- 30V/3.5A, $R_{DS(ON)}=52m\Omega@V_{GS}=4.5V$
- 30V/2.8A, $R_{DS(ON)}=58m\Omega@V_{GS}=2.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOT-23-3L package design

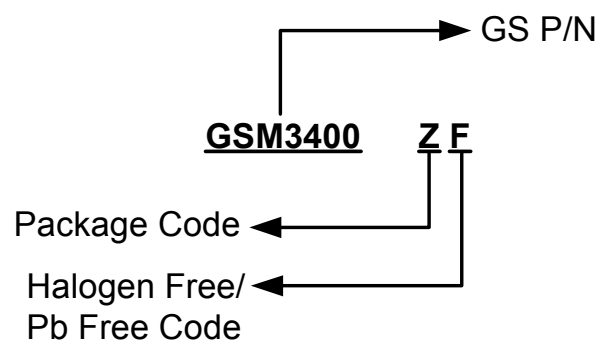
Applications

- Power Management in Note book
- LED Display
- DC-DC System
- LCD Panel

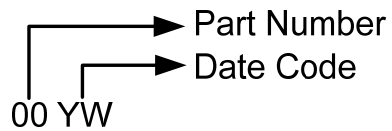
Packages & Pin Assignments



Ordering Information



Marking Information



| Part Number | Package | Part Marking | Q'ty / Reel |
|-------------|-----------|--------------|-------------|
| GSM3400ZF | SOT-23-3L | 00YW | 3000 PCS |

Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

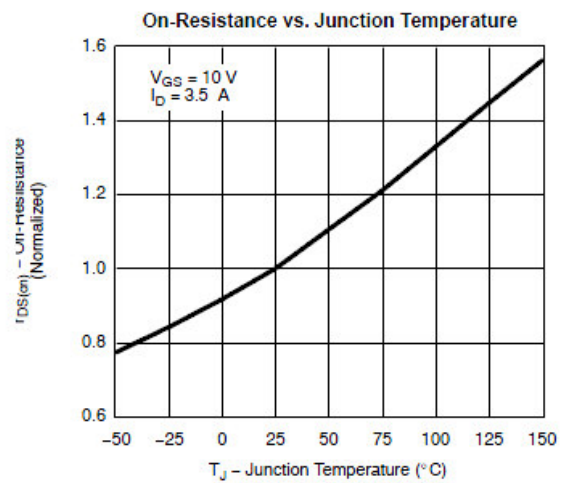
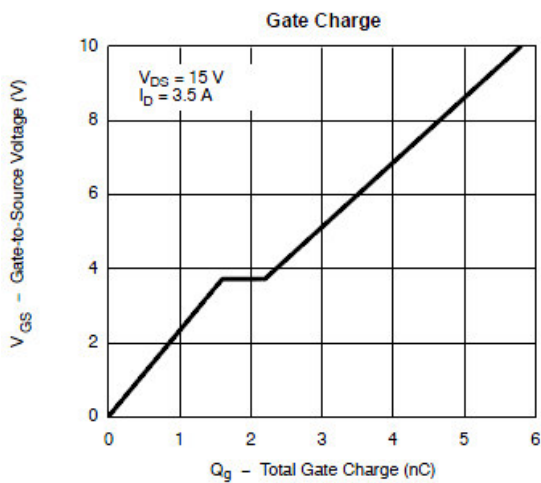
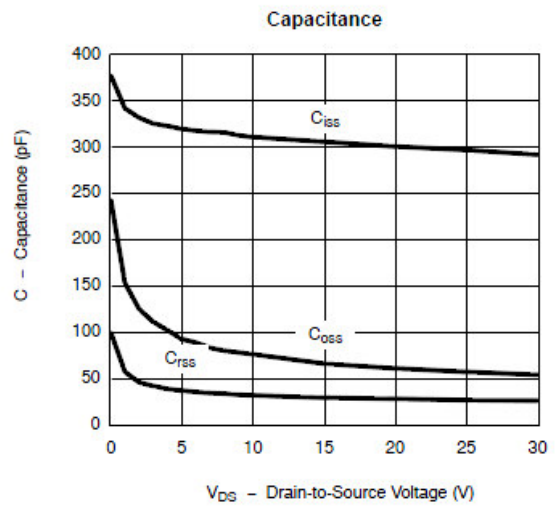
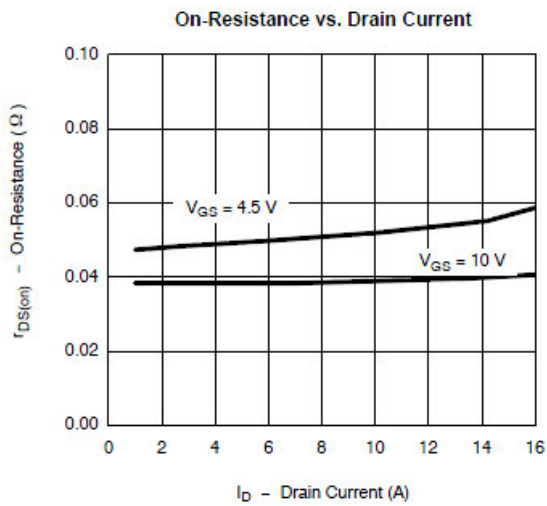
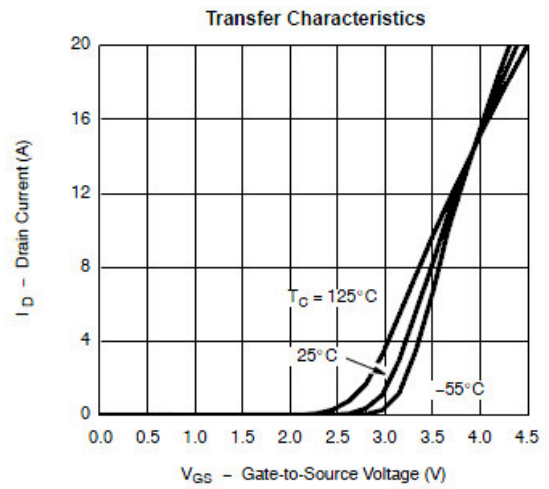
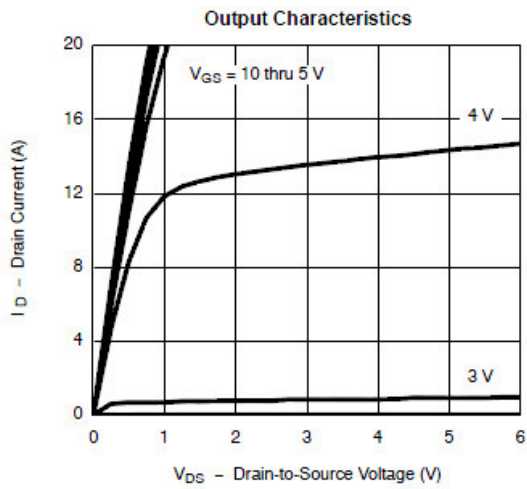
| Symbol | Parameter | Typical | Unit |
|------------------|---|----------------------|-------|
| V _{DSS} | Drain-Source Voltage | 30 | V |
| V _{GSS} | Gate –Source Voltage | ±12 | V |
| I _D | Continuous Drain Current(T _J =150°C) | T _A =25°C | 4.0 |
| | | T _A =70°C | 3.5 |
| I _{DM} | Pulsed Drain Current | 20 | A |
| I _S | Continuous Source Current(Diode Conduction) | 1.5 | A |
| P _D | Power Dissipation | T _A =25°C | 1.25 |
| | | T _A =70°C | 0.8 |
| T _J | Operating Junction Temperature | 150 | °C |
| T _{STG} | Storage Temperature Range | -55/150 | °C |
| R _{θJA} | Thermal Resistance-Junction to Ambient | 120 | °C/ W |

Electrical Characteristics

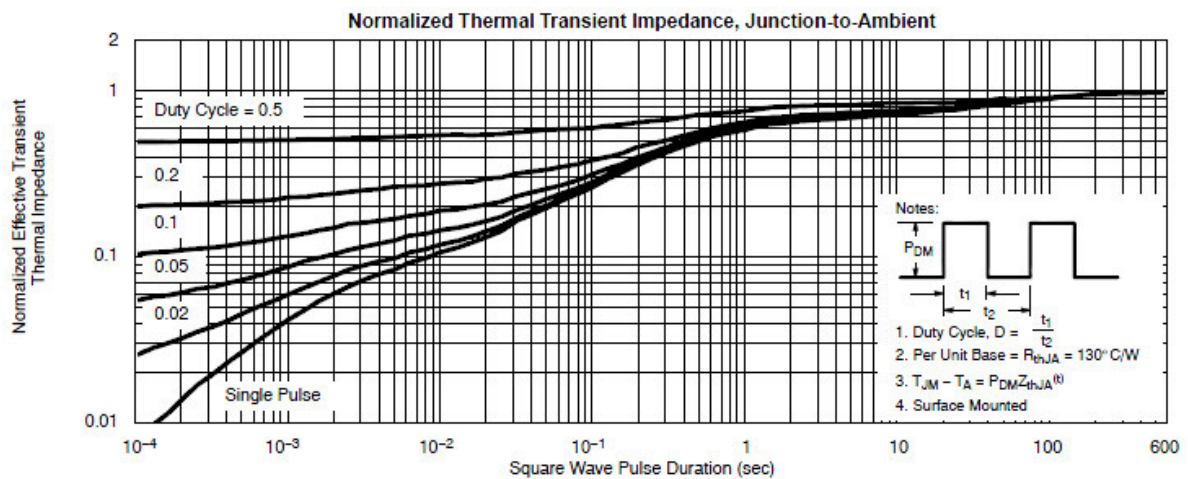
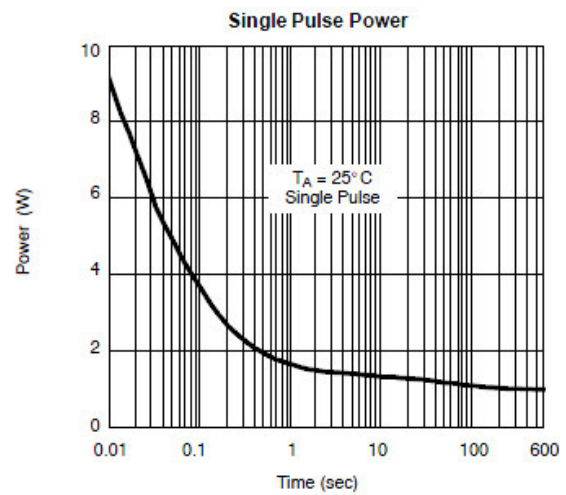
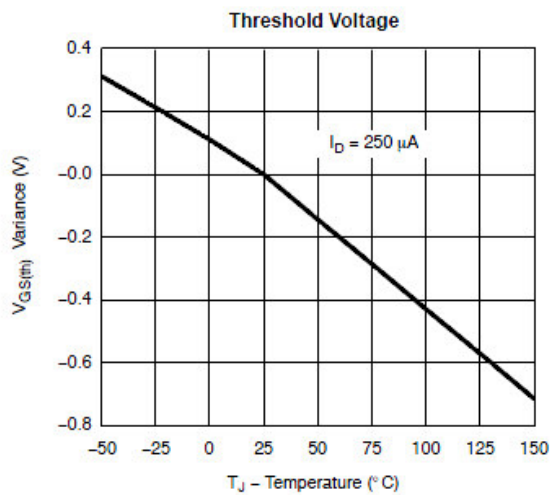
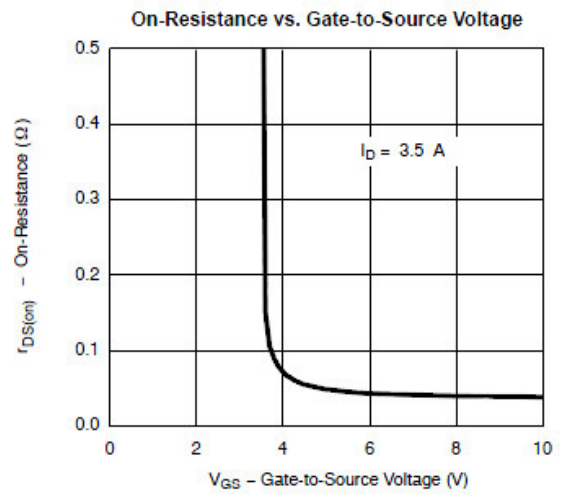
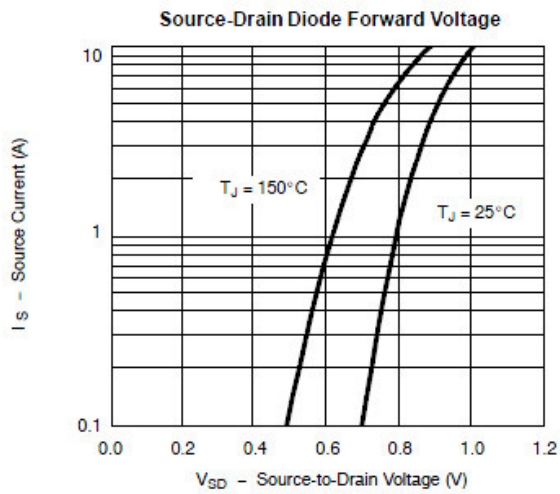
($T_A=25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Conditions | Min. | Typ | Max. | Unit |
|----------------|---------------------------------|--|------|-----|-----------|------------|
| Static | | | | | | |
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=250\mu A$ | 30 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}, I_D=250\mu A$ | 0.4 | | 1.0 | |
| I_{GSS} | Gate Leakage Current | $V_{DS}=0V, V_{GS}=\pm 12V$ | | | ± 100 | nA |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=24V, V_{GS}=0V$ | | | 1 | uA |
| | | $V_{DS}=24V, V_{GS}=0V, T_J=85^\circ\text{C}$ | | | 30 | |
| $I_{D(on)}$ | On-State Drain Current | $V_{DS}\geq 4.5V, V_{GS}=10V$ | 6 | | | A |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=10.0V, I_D=4.0A$ | | 40 | 48 | m Ω |
| | | $V_{GS}=4.5V, I_D=3.5A$ | | 44 | 52 | |
| | | $V_{GS}=2.5V, I_D=2.8A$ | | 48 | 58 | |
| g_{fs} | Forward Transconductance | $V_{DS}=4.5V, I_D=2.5A$ | | 8 | | S |
| V_{SD} | Diode Forward Voltage | $I_S=3.4A, V_{GS}=0V$ | | 0.8 | 1.2 | V |
| Dynamic | | | | | | |
| C_{iss} | Input Capacitance | $V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$ | | 320 | | pF |
| C_{oss} | Output Capacitance | | | 70 | | |
| C_{rss} | Reverse Transfer Capacitance | | | 30 | | |
| Q_g | Total Gate Charge | $V_{DS}=15V, V_{GS}=10V, I_D=2.6A$ | | 3.0 | 4.5 | nC |
| Q_{gs} | Gate-Source Charge | | | 1.6 | | |
| Q_{gd} | Gate-Drain Charge | | | 0.6 | | |
| $t_{d(on)}$ | Turn-On Time | $V_{DD}=15V, R_L=15\Omega, I_D=1.0A, V_{GEN}=10V, R_G=6\Omega$ | | 8 | 12 | ns |
| T_r | | | | 12 | 18 | |
| $t_{d(off)}$ | Turn-Off Time | | | 15 | 30 | |
| T_f | | | | 8 | 15 | |

Typical Performance Characteristics

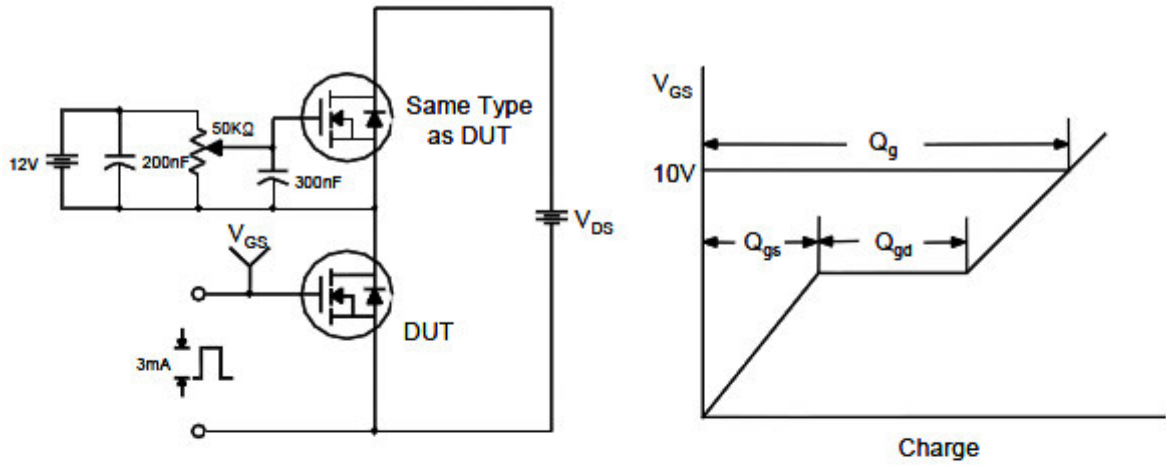


Typical Performance Characteristics (continue)

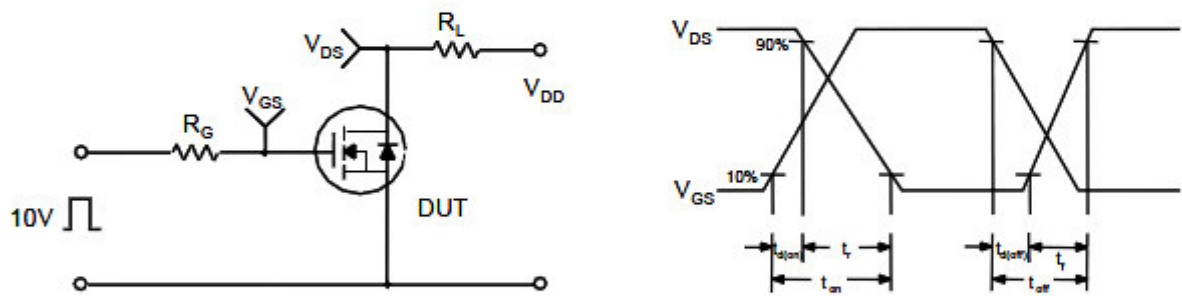


Typical Characteristics

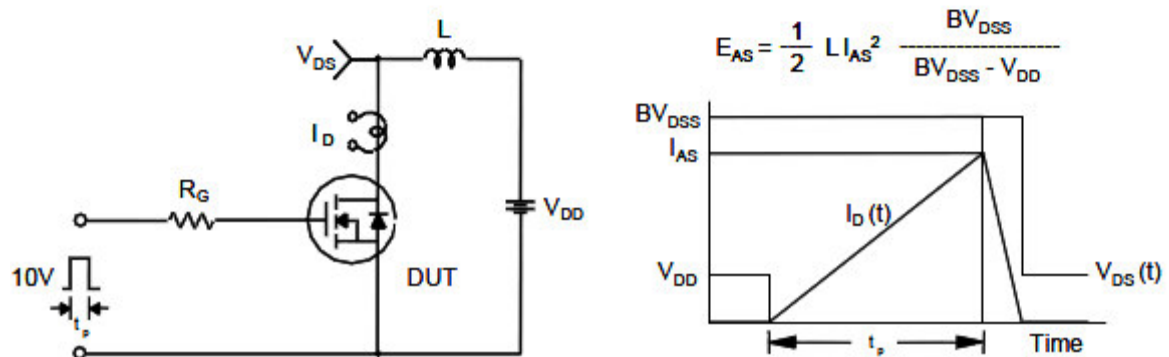
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

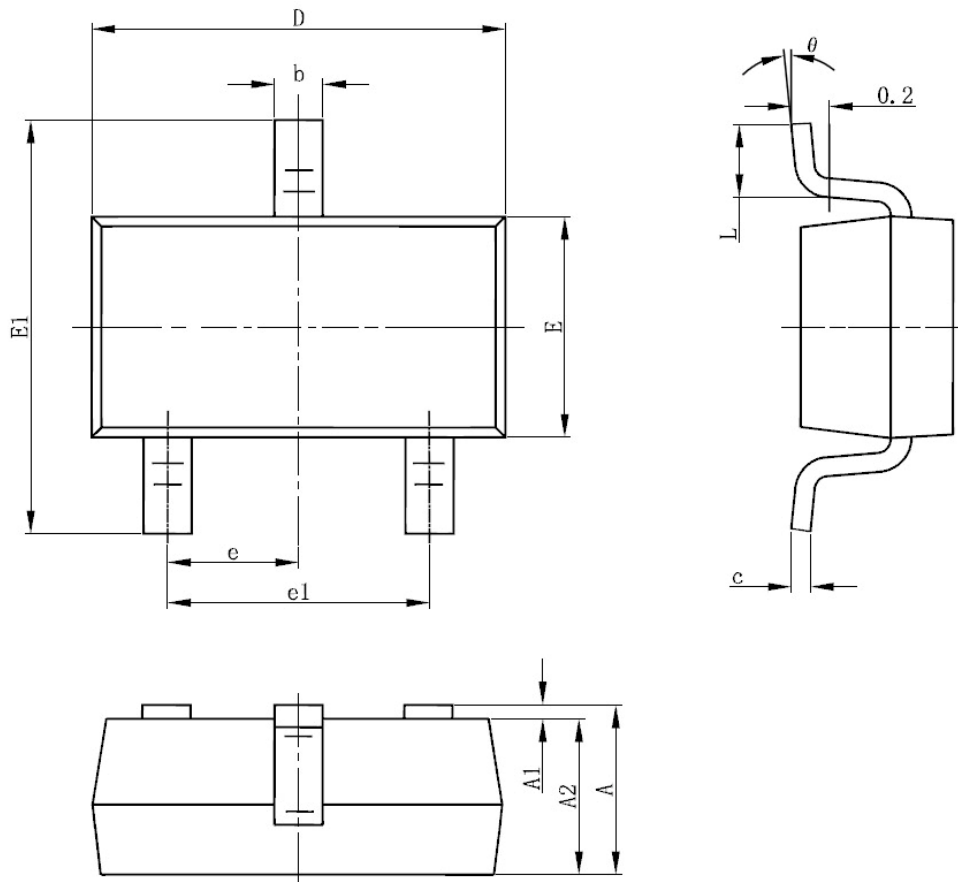


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-23-3L











| Dimensions | | | | |
|------------|-------------|------|-----------|-------|
| SYMBOL | Millimeters | | Inches | |
| | MIN | MAX | MIN | MAX |
| A | 1.05 | 1.25 | 0.041 | 0.049 |
| A1 | 0 | 0.1 | 0 | 0.004 |
| A2 | 1.05 | 1.15 | 0.041 | 0.045 |
| b | 0.3 | 0.4 | 0.012 | 0.016 |
| c | 0.1 | 0.2 | 0.004 | 0.008 |
| D | 2.82 | 3.02 | 0.111 | 0.119 |
| E | 1.5 | 1.7 | 0.059 | 0.067 |
| E1 | 2.65 | 2.95 | 0.104 | 0.116 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.8 | 2 | 0.071 | 0.079 |
| L | 0.700 REF | | 0.028 REF | |
| L1 | 0.3 | 0.6 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |



NOTICE

Information furnished is believed to be accurate and reliable. However Globaltech Semiconductor assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Globaltech Semiconductor. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information without express written approval of Globaltech Semiconductor.

CONTACT US

| GS Headquarter | |
|---|--|
|  | 4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd NeiHu District Taipei City 114, Taiwan (R.O.C) |
|  | 886-2-2657-9980 |
|  | 886-2-2657-3630 |
|  | sales_twn@gs-power.com |

| Wu-Xi Branch | |
|---|---|
|  | No.21 Changjiang Rd., WND, Wuxi, Jiangsu, China (INFO. &. TECH. Science Park Building A 210 Room) |
|  | 86-510-85217051 |
|  | 86-510-85211238 |
|  | sales_cn@gs-power.com |

| RD Division | |
|---|--------------------------------------|
|  | 824 Bolton Drive Milpitas. CA. 95035 |
|  | 1-408-457-0587 |