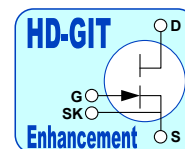


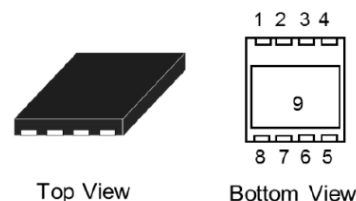
600V/56mΩ GaN Power Transistor

PGA26E07BA Product Overview



Overview

Panasonic's GaN power transistors offer superior device performances enabling higher power conversion efficiency and higher power density of power electronic systems than those by conventional Si-based power devices.



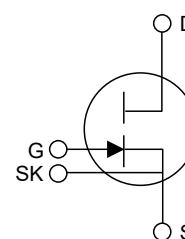
Features

- Crystal growth of GaN on 6-inch silicon substrate.
- 600V enhancement mode power switch Normally-Off operation with single GaN device by Panasonic's proprietary GIT: Gate Injection Transistor technology.
- Extremely high-speed switching characteristics.
- Current Collapse Free 600V and more by Panasonic's proprietary HD-GIT: Hybrid-Drain-embedded GIT
- Zero recovery loss characteristics.

| | |
|---------------|---------|
| Drain | 1,2,3,4 |
| Source | 5,6,9 |
| Kelvin Source | 7 |
| Gate | 8 |

Applications

- Power supply for AC-DC (PFC, Isolated DC-DC)
- Battery charger system
- Photovoltaic power converter, Motor inverter



Absolute Maximum Ratings (Tj=25°C, unless otherwise specified)

| Item | Symbol | Ratings | Unit |
|------------------------------|--------|-------------|------|
| Drain-source voltage(DC) | VDSS | 600 | V |
| Drain-source voltage(pulse) | VDSP | 750 | V |
| Gate current(DC) | IG | 50 | mA |
| Drain current (DC) (Tc=25°C) | ID | 31 | A |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |

Note) All conditions should be within 150°C Tj.

Thermal Characteristics (Typical values, unless otherwise specified)

| Item | Symbol | Ratings | Unit |
|--|----------|---------|------|
| Thermal resistance (junction to case) | Rth(j-c) | max 1.0 | °C/W |
| Thermal resistance (junction to ambient) | Rth(j-a) | max 46 | °C/W |
| Power dissipation (Tc=25°C) | PD | 125 | W |

The products and product specifications described in this document are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.

As of June, 2019
FLY000074_EN

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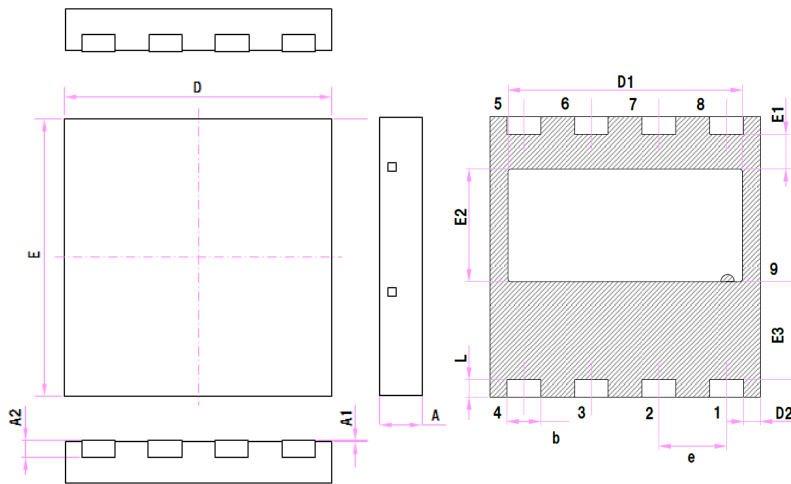
Panasonic Semiconductor Solutions Co., Ltd
1 Kotari-yakemachi, Nagaokakyo, Kyoto 617-8520, Japan
81-75-951-8151
<https://industrial.panasonic.com/ww/products/semiconductors>

Electrical Characteristics (Typical values at Tj=25°C, unless otherwise specified)

| Item | Symbol | Condition | Value | Unit |
|---|----------|------------------------------|--------|------|
| Drain cut-off current | IDSS | VDS=600V, VGS=0V, Tj=25°C | max100 | μA |
| | | VDS=600V, VGS=0V, Tj=150°C | 100 | μA |
| Gate-source leakage current | IGSS | VGS= -3V, VDS=0V | -1 | μA |
| Gate threshold voltage | VTH | VDS=10V, IDS=2.6mA | 1.2 | V |
| Drain-source on-state resistance | RDS(on) | IGS=26.1mA, IDS=8A, Tj=25°C | 56 | mΩ |
| | | IGS=26.1mA, IDS=8A, Tj=150°C | 110 | mΩ |
| Gate resistance | RG | f=100 MHz, open drain | 0.6 | Ω |
| Input capacitance | Ciss | VDS=400V, VGS=0V, f=1MHz | 405 | pF |
| Output capacitance | Coss | | 71 | pF |
| Reverse transfer capacitance | Crss | | 0.4 | pF |
| Effective output capacitance (energy related) | Co(er) | VDS=0V to 480V | 87 | pF |
| Effective output capacitance (time related) | Co(tr) | | 106 | pF |
| Gate charge | Qg | VDD=400V, IDS=8A | 5.0 | nC |
| Gate-source charge | Qgs | | 0.9 | nC |
| Gate-drain charge | Qgd | | 2.6 | nC |
| Gate plateau voltage | Vplateau | VDD=400V, IDS=8A | 1.7 | V |
| Source-drain forward voltage | VSD | VGS=0V, ISD=8A | 2.1 | V |
| Reverse recovery charge | Qrr | VDS=400V, ISD=8A | 0 | nC |
| Output charge | Qoss | | 45 | nC |

Package Outline

Unit: mm



| SYMBOL | DIMENSION | | |
|--------|-------------|------|------|
| | MIN | NOM | MAX |
| A | 1.15 | 1.25 | 1.35 |
| A1 | 0.00 | 0.02 | 0.05 |
| A2 | 0.40 | 0.50 | 0.60 |
| b | 0.90 | 1.00 | 1.10 |
| D | 7.90 | 8.00 | 8.10 |
| D1 | 6.84 | 6.94 | 7.04 |
| D2 | 0.40 | 0.50 | 0.60 |
| E | 7.90 | 8.00 | 8.10 |
| E1 | 0.90 | 1.00 | 1.10 |
| E2 | 3.10 | 3.20 | 3.30 |
| E3 | 2.70 | 2.80 | 2.90 |
| e | 2.00 B.S.C. | | |
| L | 0.40 | 0.50 | 0.60 |

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