

2SK1761

Silicon N Channel MOS FET

REJ03G0968-0200
(Previous: ADE-208-1315)
Rev.2.00
Sep 07, 2005

Application

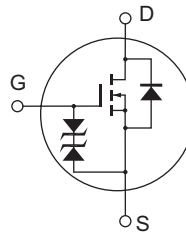
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator, DC-DC converter

Outline

RENESAS Package code: PRSS0004AC-A
(Package name: TO-220AB)



1. Gate
2. Drain
(Flange)
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|-------------------------------------------|-------------------------------------|-------------|------|
| Drain to source voltage | V _{DS} | 250 | V |
| Gate to source voltage | V _{GSS} | ±30 | V |
| Drain current | I _D | 12 | A |
| Drain peak current | I _{D(pulse)} ^{*1} | 48 | A |
| Body to drain diode reverse drain current | I _{DR} | 12 | A |
| Channel dissipation | P _{ch} ^{*2} | 75 | W |
| Channel temperature | T _{ch} | 150 | °C |
| Storage temperature | T _{stg} | -55 to +150 | °C |

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1 %
 2. Value at Tc = 25°C

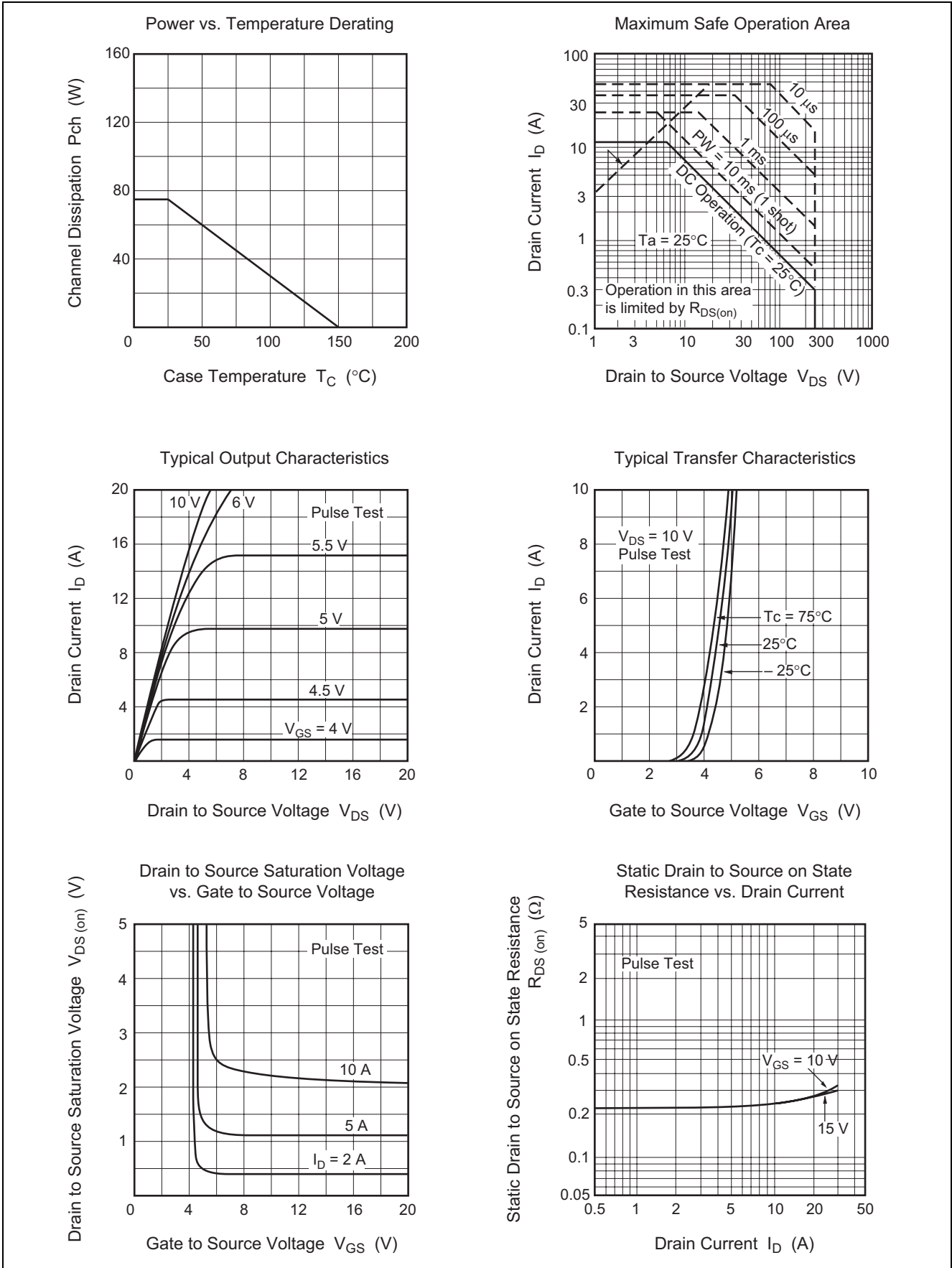
Electrical Characteristics

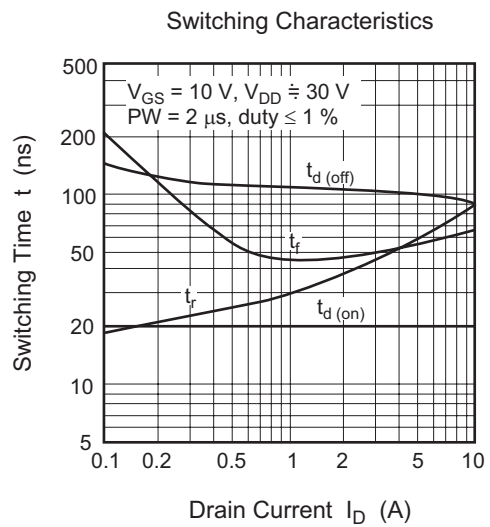
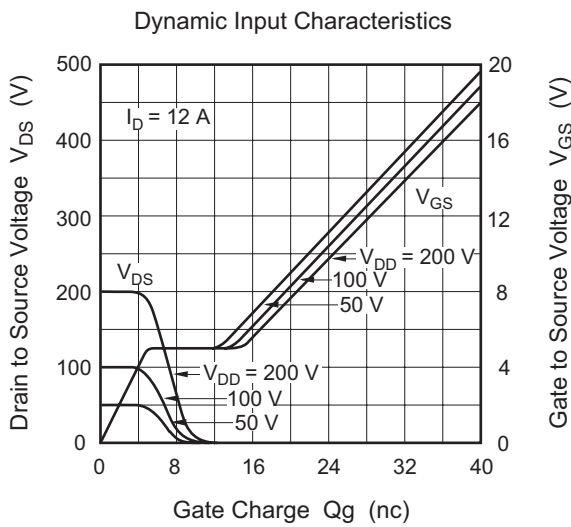
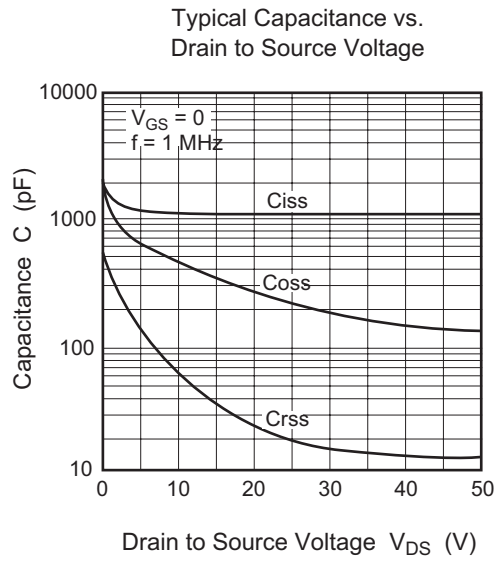
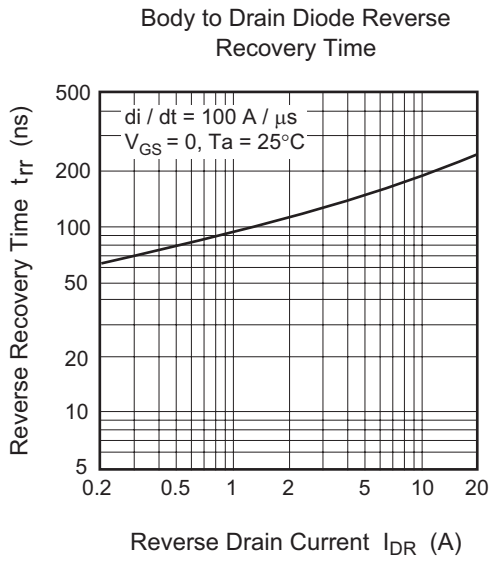
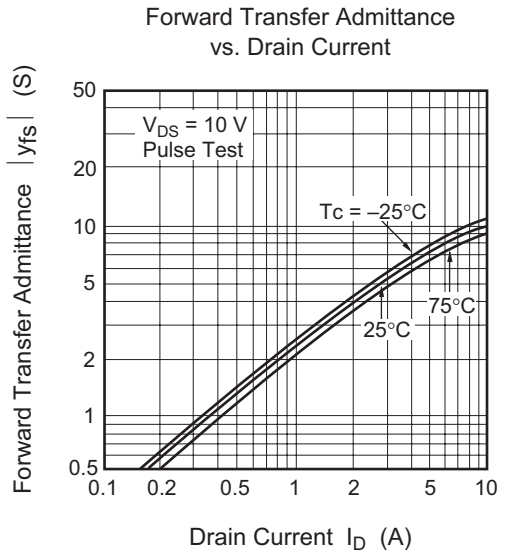
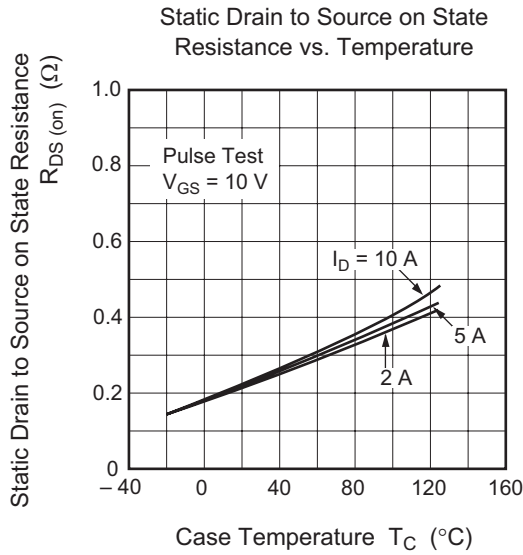
(Ta = 25°C)

| Item | Symbol | Min | Typ | Max | Unit | Test Conditions |
|--------------------------------------------|----------------------|-----|------|------|------|----------------------------------------------------------------------------------|
| Drain to source breakdown voltage | V _{(BR)DSS} | 250 | — | — | V | I _D = 10 mA, V _{GS} = 0 |
| Gate to source breakdown voltage | V _{(BR)GSS} | ±30 | — | — | V | I _G = ±100 μA, V _{DS} = 0 |
| Gate to source leak current | I _{GSS} | — | — | ±10 | μA | V _{GS} = ±25 V, V _{DS} = 0 |
| Zero gate voltage drain current | I _{DSS} | — | — | 250 | μA | V _{DS} = 200 V, V _{GS} = 0 |
| Gate to source cutoff voltage | V _{GS(off)} | 2.0 | — | 3.0 | V | I _D = 1 mA, V _{DS} = 10 V |
| Static drain to source on state resistance | R _{DS(on)} | — | 0.23 | 0.35 | Ω | I _D = 6 A, V _{GS} = 10 V ^{*3} |
| Forward transfer admittance | y _{fs} | 5.0 | 8.0 | — | S | I _D = 6 A, V _{DS} = 10 V ^{*3} |
| Input capacitance | C _{iss} | — | 1100 | — | pF | V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz |
| Output capacitance | C _{oss} | — | 440 | — | pF | |
| Reverse transfer capacitance | C _{rss} | — | 68 | — | pF | |
| Turn-on delay time | t _{d(on)} | — | 20 | — | ns | I _D = 6 A, V _{GS} = 10 V, R _L = 5 Ω |
| Rise time | t _r | — | 65 | — | ns | |
| Turn-off delay time | t _{d(off)} | — | 100 | — | ns | |
| Fall time | t _f | — | 44 | — | ns | |
| Body to drain diode forward voltage | V _{DF} | — | 1.0 | — | V | I _F = 12 A, V _{GS} = 0 |
| Body to drain diode reverse recovery time | t _{rr} | — | 200 | — | ns | I _F = 12 A, V _{GS} = 0, di _F / dt = 100 A / μs |

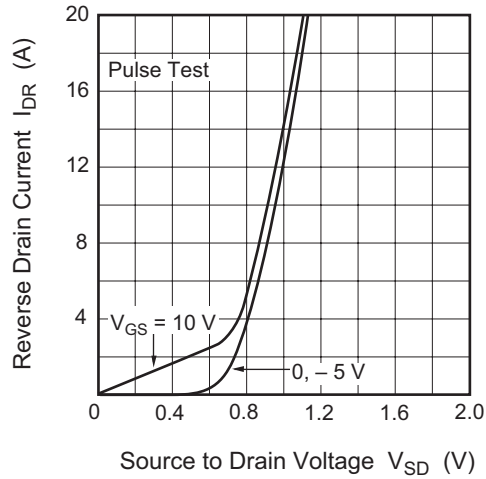
Note: 3. Pulse Test

Main Characteristics

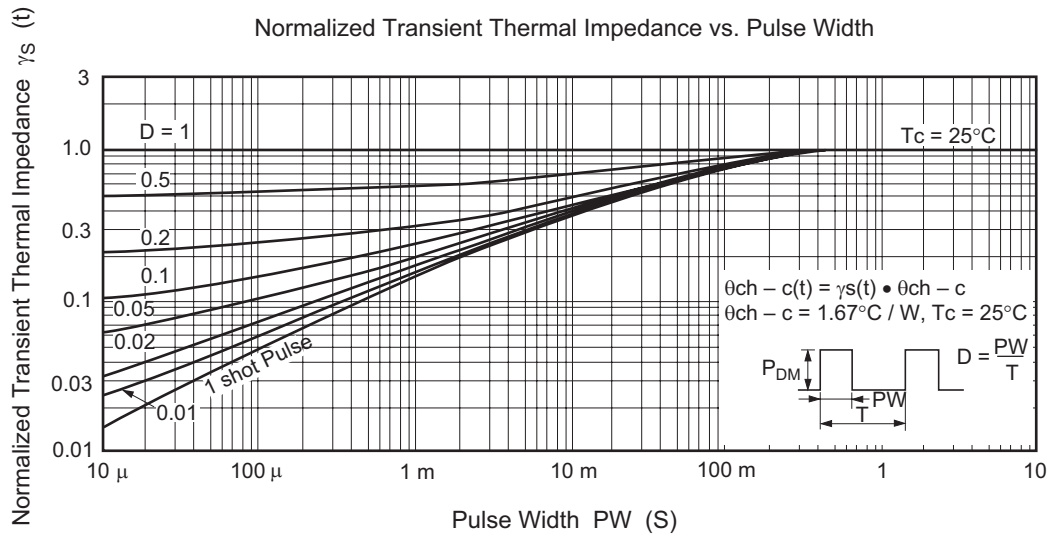




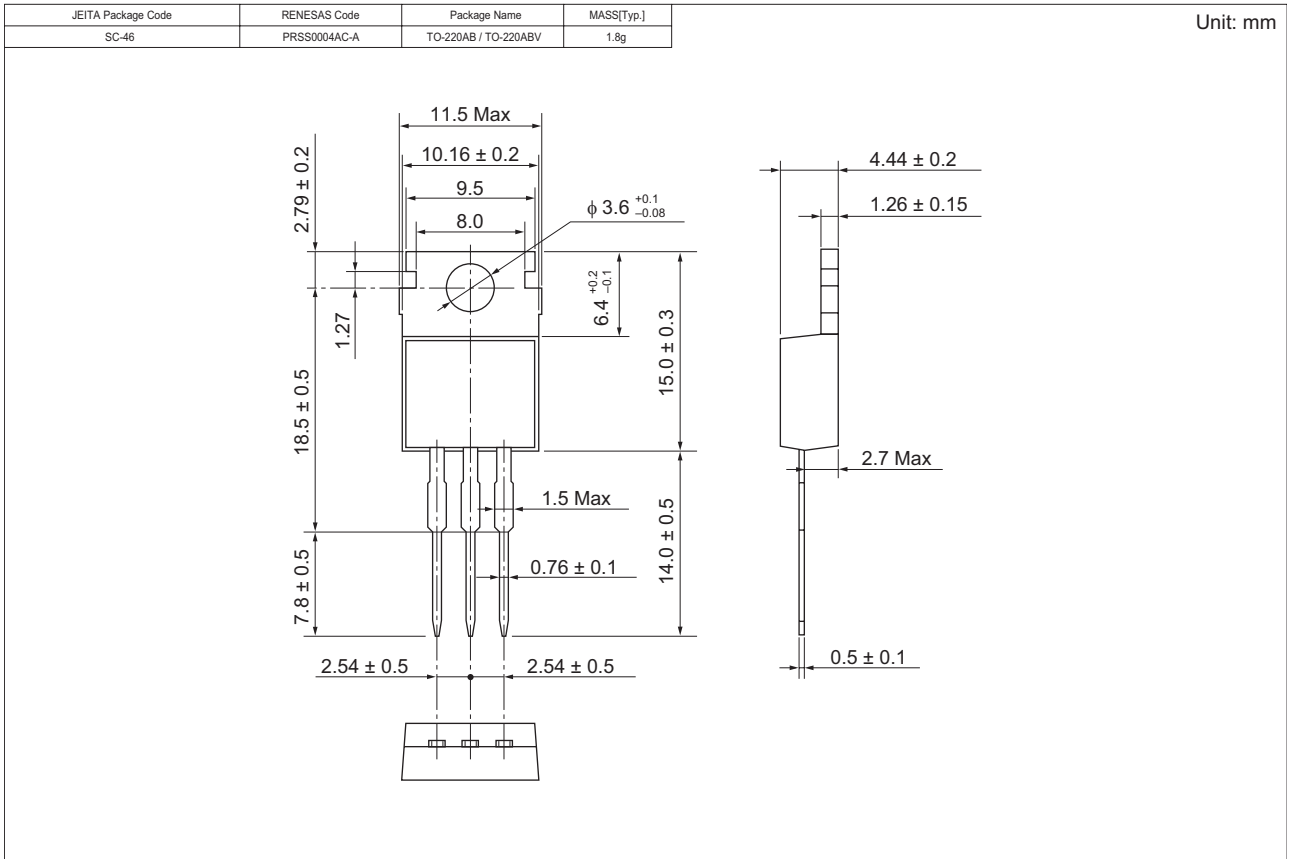
Reverse Drain Current vs. Source to Drain Voltage



Normalized Transient Thermal Impedance vs. Pulse Width



Package Dimensions



Ordering Information

| Part Name | Quantity | Shipping Container |
|-----------|----------|--------------------|
| 2SK1761-E | 500 pcs | Box (Sack) |

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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Renesas Technology America, Inc.

450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.

10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.

Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.

1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.

Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> 2-796-3115, Fax: <82> 2-796-2145

Renesas Technology Malaysia Sdn. Bhd.

Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510