

2SK2529

Silicon N Channel MOS FET

REJ03G1014-0800
(Previous: ADE-208-356F)
Rev.8.00
Sep 07, 2005

Application

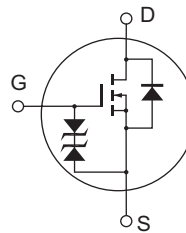
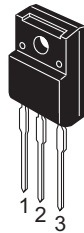
High speed power switching

Features

- Low on-resistance
- $R_{DS(on)} = 7 \text{ m}\Omega$ typ.
- High speed switching
- 4 V gate drive device can be driven from 5 V source

Outline

RENESAS Package code: PRSS0003AE-A
(Package name: TO-220C•FM)



1. Gate
2. Drain
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	50	A
Drain peak current	I _{D(pulse)} ^{*1}	200	A
Body to drain diode reverse drain current	I _{DR}	50	A
Avalanche current	I _{AP} ^{*3}	45	A
Avalanche energy	E _{AR} ^{*3}	174	mJ
Channel dissipation	P _{ch} ^{*2}	35	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 T_c = 25°C
 3. Value at T_{ch} = 25°C, R_g ≥ 50 Ω

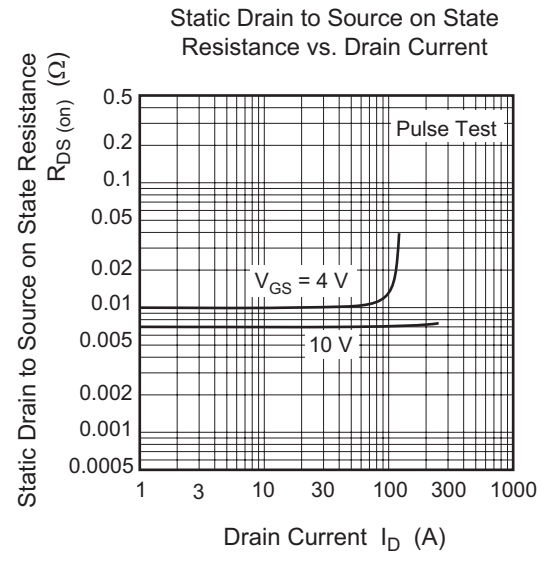
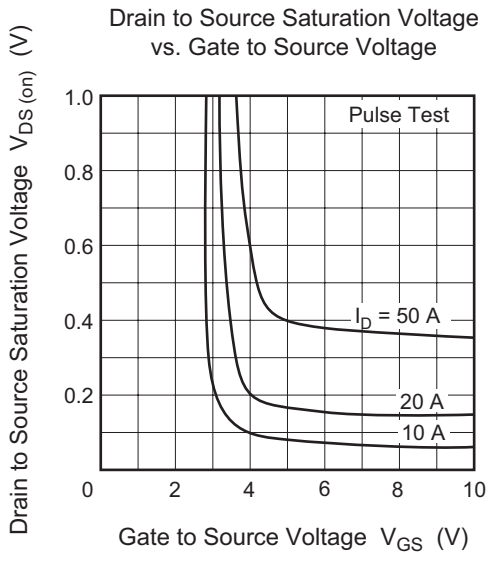
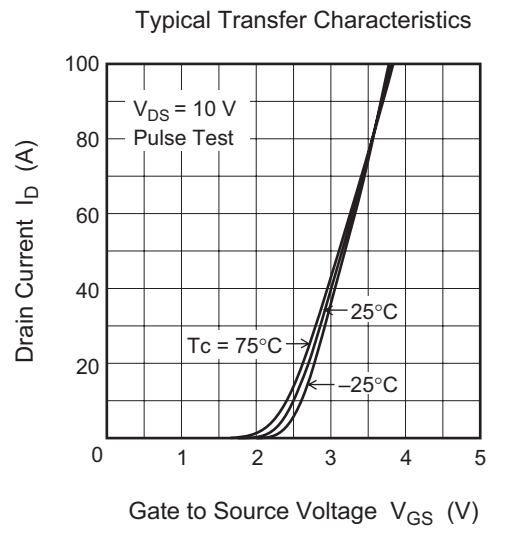
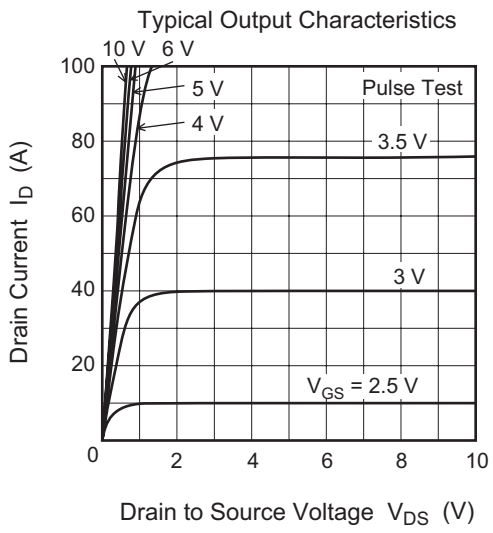
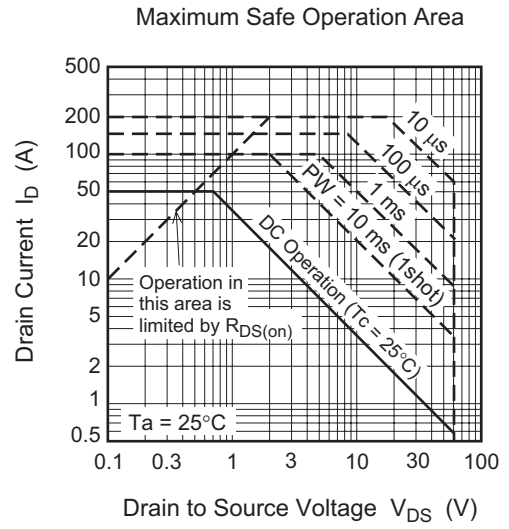
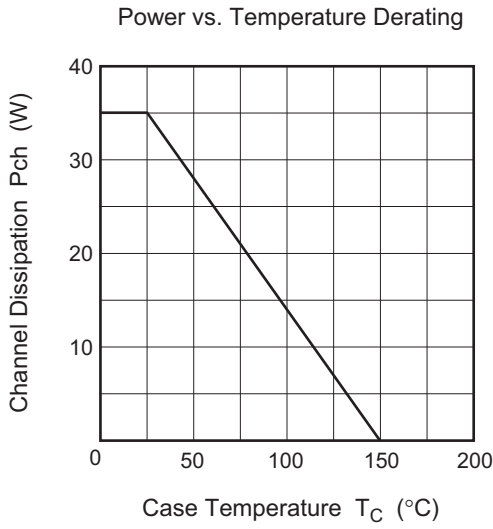
Electrical Characteristics

(Ta = 25°C)

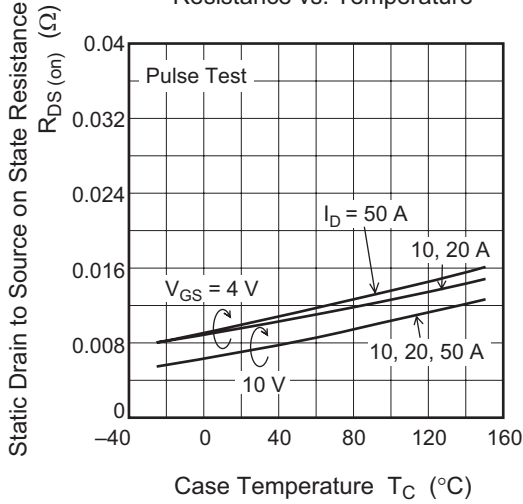
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	60	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	10	μA	V _{DS} = 60 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	1.0	—	2.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	7	10	mΩ	I _D = 25 A, V _{GS} = 10 V ^{*4}
		—	10	16	mΩ	I _D = 25 A, V _{GS} = 4 V ^{*4}
Forward transfer admittance	y _{fs}	35	55	—	S	I _D = 25 A, V _{DS} = 10 V ^{*4}
Input capacitance	C _{iss}	—	3550	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	1760	—	pF	
Reverse transfer capacitance	C _{rss}	—	500	—	pF	
Turn-on delay time	t _{d(on)}	—	35	—	ns	I _D = 25 A, V _{GS} = 10 V, R _L = 1.2 Ω
Rise time	t _r	—	230	—	ns	
Turn-off delay time	t _{d(off)}	—	470	—	ns	
Fall time	t _f	—	360	—	ns	
Body to drain diode forward voltage	V _{DF}	—	0.85	—	V	I _F = 50 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	135	—	ns	I _F = 50 A, V _{GS} = 0 di _F / dt = 50 A / μs

Note: 4. Pulse Test

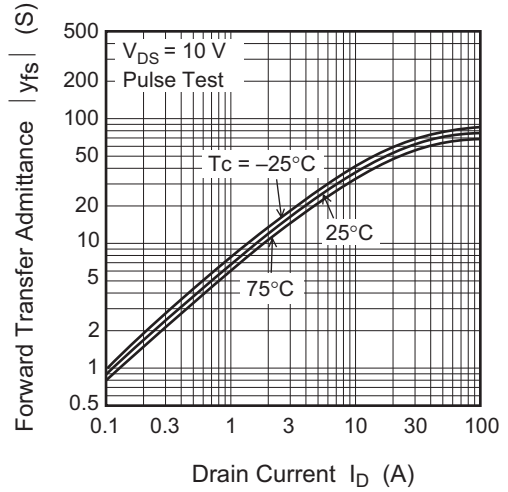
Main Characteristics



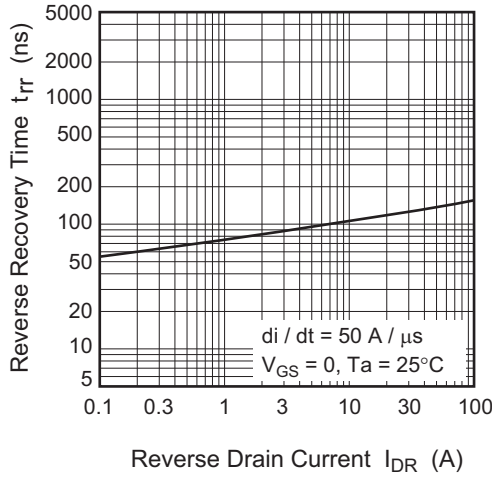
Static Drain to Source on State Resistance vs. Temperature



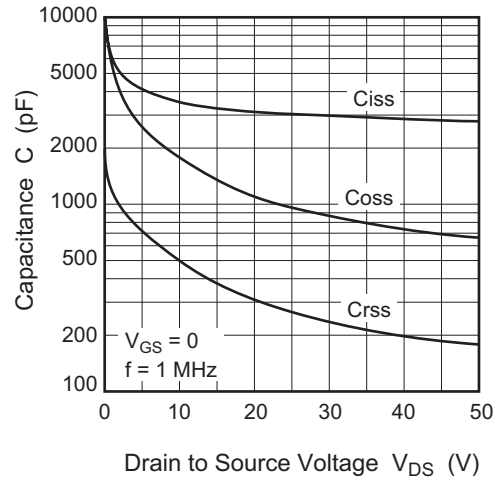
Forward Transfer Admittance vs. Drain Current



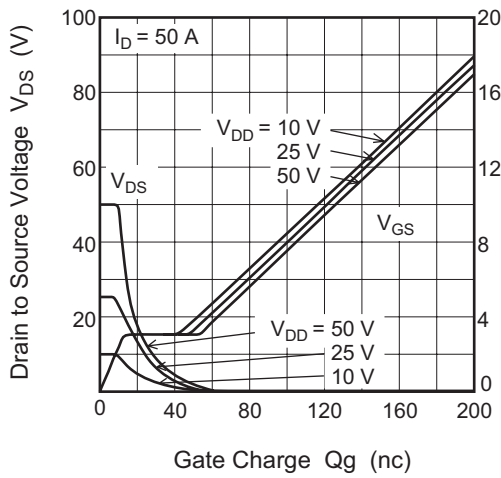
Body to Drain Diode Reverse Recovery Time



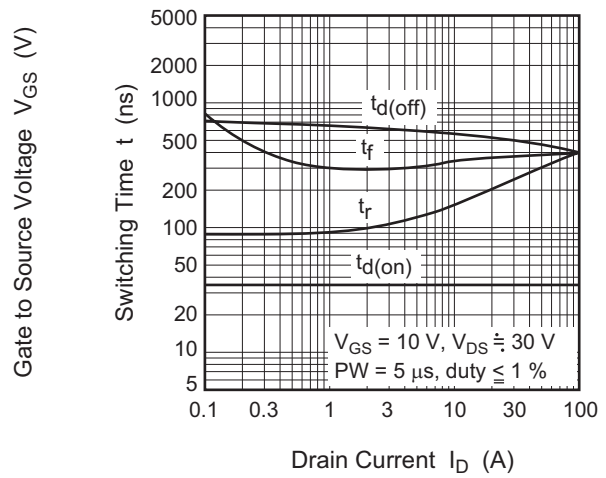
Typical Capacitance vs. Drain to Source Voltage

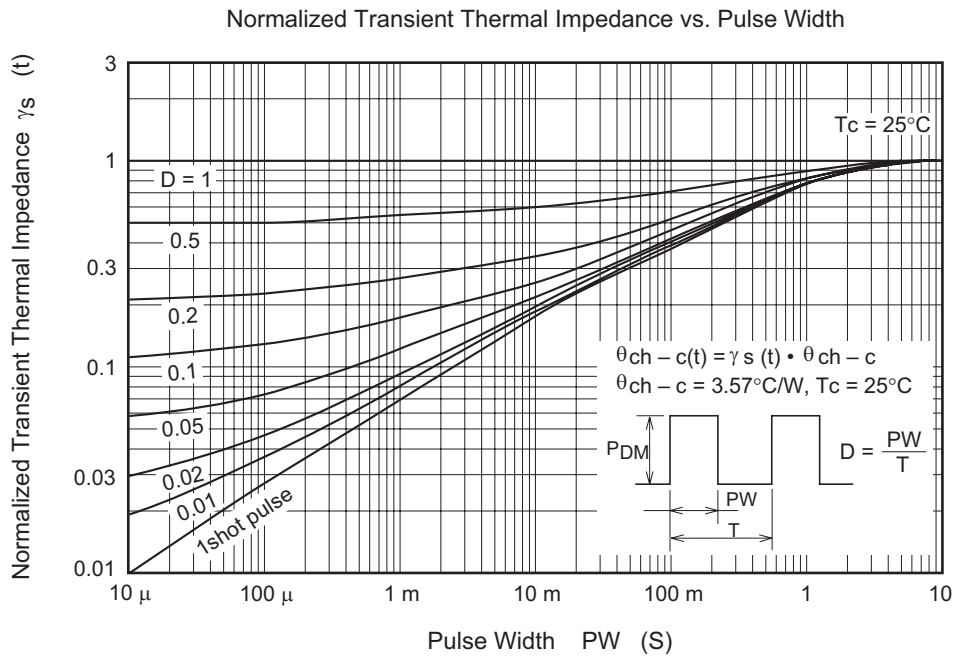
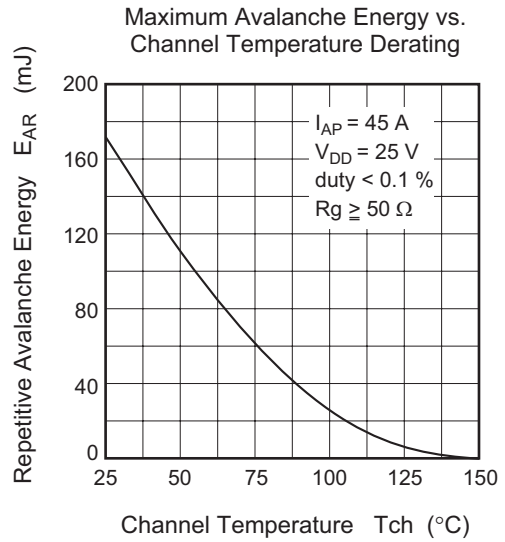
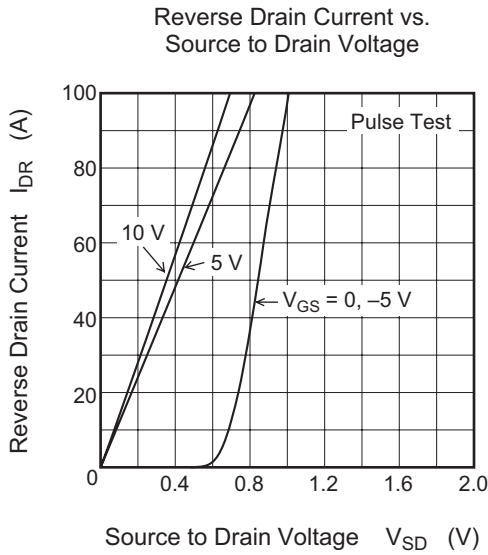


Dynamic Input Characteristics

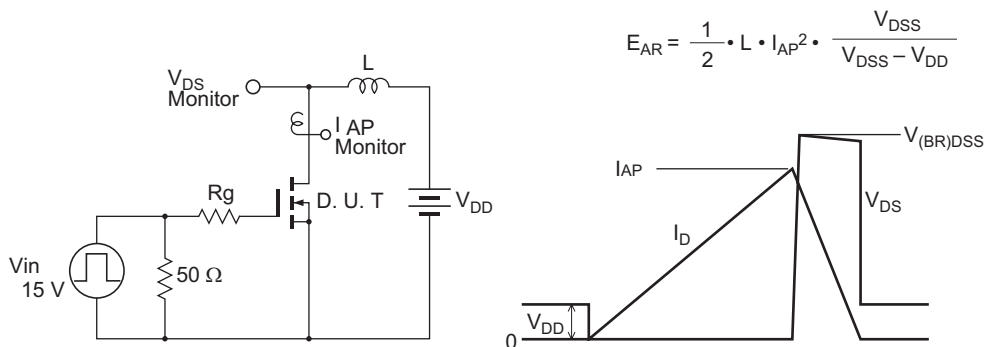


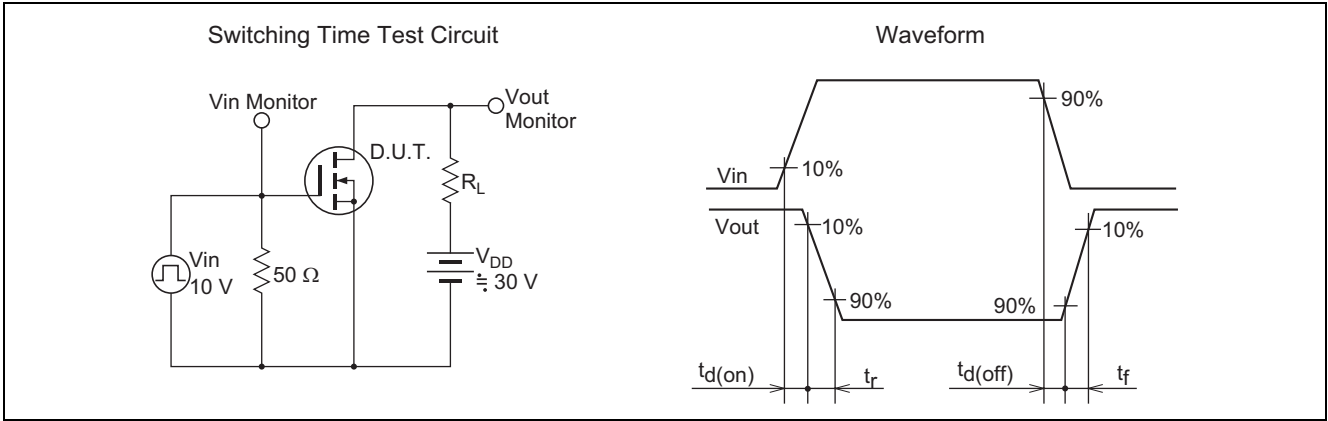
Switching Characteristics



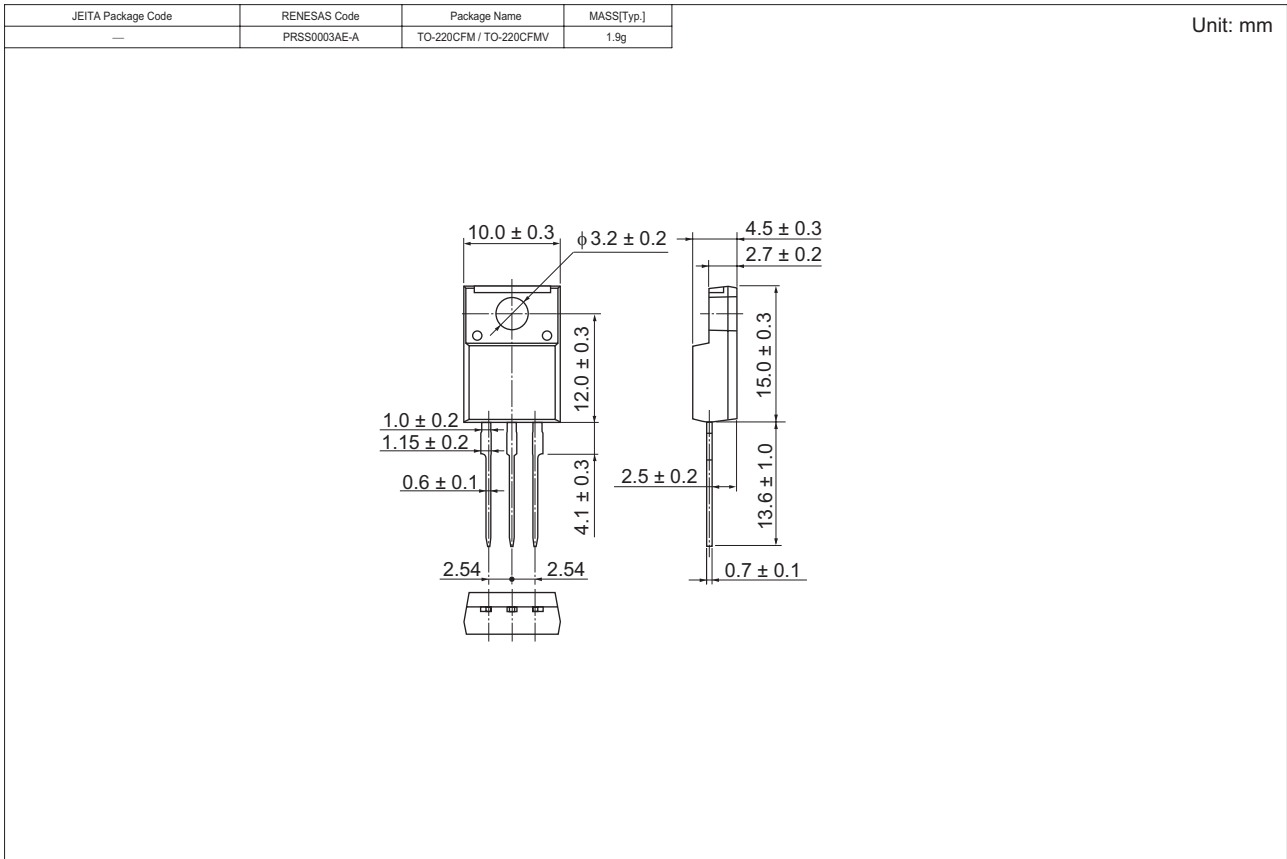


Avalanche Test Circuit and Waveform





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK2529-E	50 pcs	Plastic magazine

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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