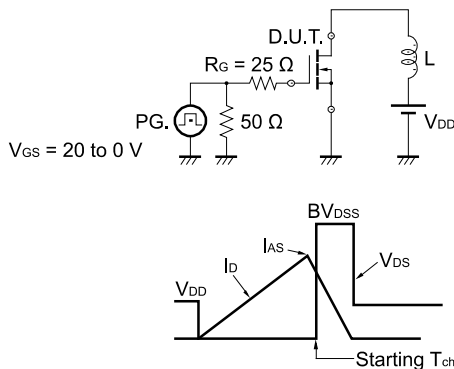


Electrical Characteristics (T_A = 25°C)

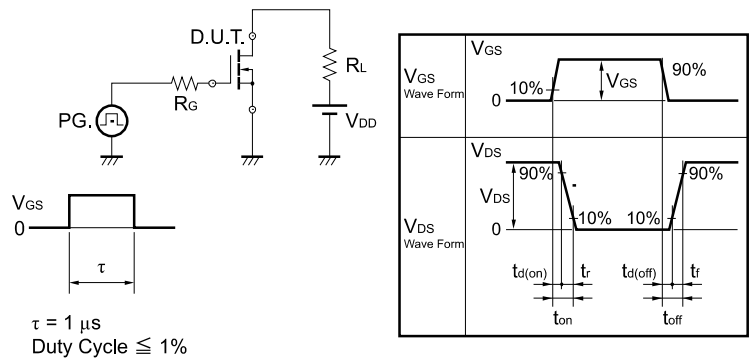
Item	Symbol	MIN.	TYP.	MAX.	Unit	Test Conditions
Zero Gate Voltage Drain Current	I _{DSS}			1	μA	V _{DS} = 60 V, V _{GS} = 0 V
Gate Leakage Current	I _{GSS}			±100	nA	V _{GS} = ±20 V, V _{DS} = 0 V
Gate to Source Cut-off Voltage	V _{GS(off)}	2.0		4.0	V	V _{DS} = 10 V, I _D = 1 mA
Forward Transfer Admittance ^{Note5}	y _{fs}	35			S	V _{DS} = 10 V, I _D = 50 A
Drain to Source On-state Resistance ^{Note5}	R _{DS(on)}		3.3	4.2	mΩ	V _{GS} = 10 V, I _D = 50 A
Input Capacitance	C _{iss}		7730		pF	V _{DS} = 25 V, V _{GS} = 0 V, f = 1 MHz
Output Capacitance	C _{oss}		560		pF	
Reverse Transfer Capacitance	C _{rss}		290		pF	
Turn-on Delay Time	t _{d(on)}		35		ns	V _{DD} = 30 V, I _D = 50 A, V _{GS} = 10 V, R _G = 0 Ω
Rise Time	t _r		12		ns	
Turn-off Delay Time	t _{d(off)}		76		ns	
Fall Time	t _f		14		ns	
Total Gate Charge	Q _G		133		nC	V _{DD} = 48 V, V _{GS} = 10 V, I _D = 100 A
Gate to Source Charge	Q _{GS}		38		nC	
Gate to Drain Charge	Q _{GD}		38		nC	
Body Diode Forward Voltage ^{Note5}	V _{F(S-D)}			1.5	V	I _F = 100 A, V _{GS} = 0 V
Reverse Recovery Time	t _{rr}		44		ns	I _F = 50 A, V _{GS} = 0 V, di/dt = 100 A/μs
Reverse Recovery Charge	Q _{rr}		61		nC	

Notes: 5. Pulsed test

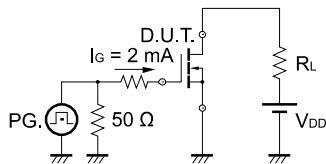
TEST CIRCUIT 1 AVALANCHE CAPABILITY



TEST CIRCUIT 2 SWITCHING TIME

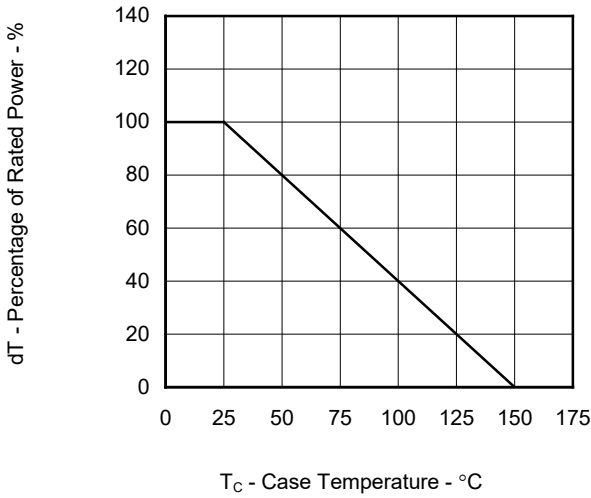


TEST CIRCUIT 3 GATE CHARGE

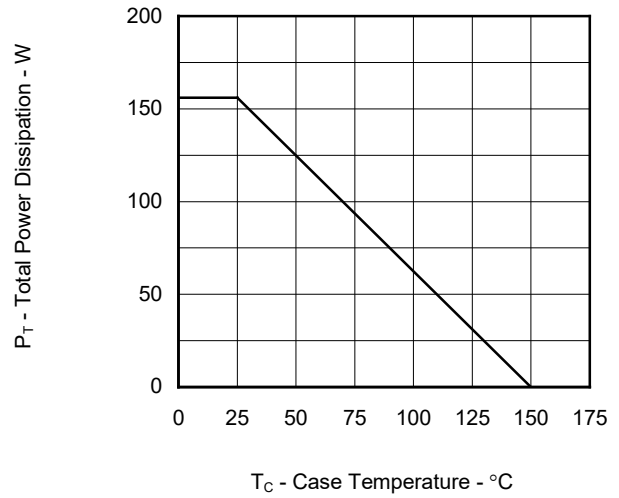


Typical Characteristics ^{Note6}

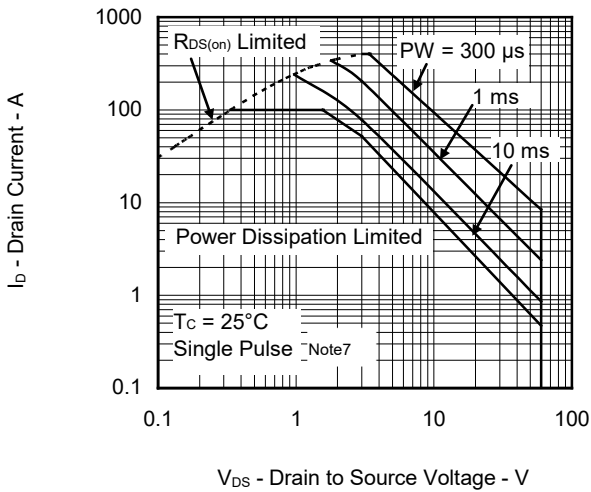
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



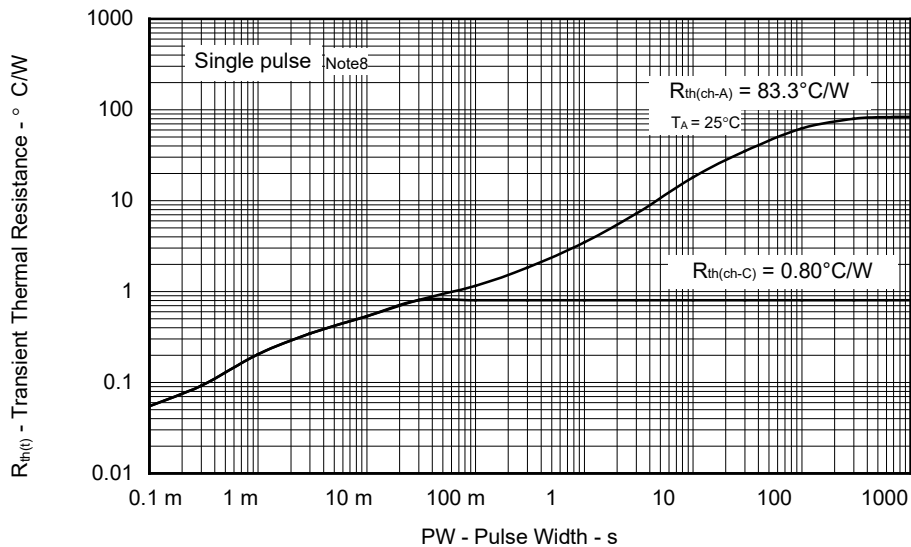
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



FORWARD BIAS SAFE OPERATING AREA

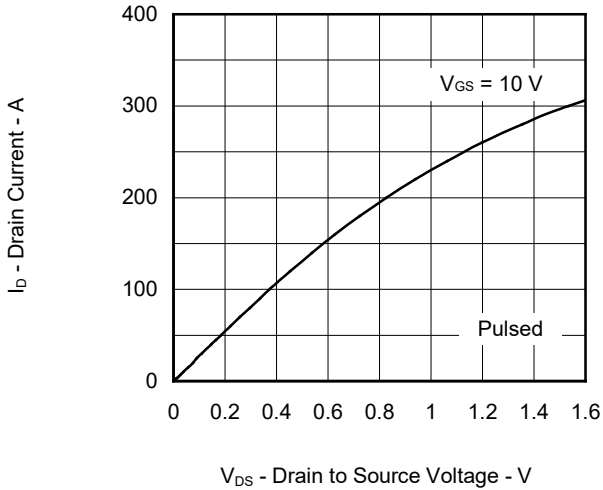


TRANSIENT THERMAL RESISTANCE vs. PULSE WIDTH

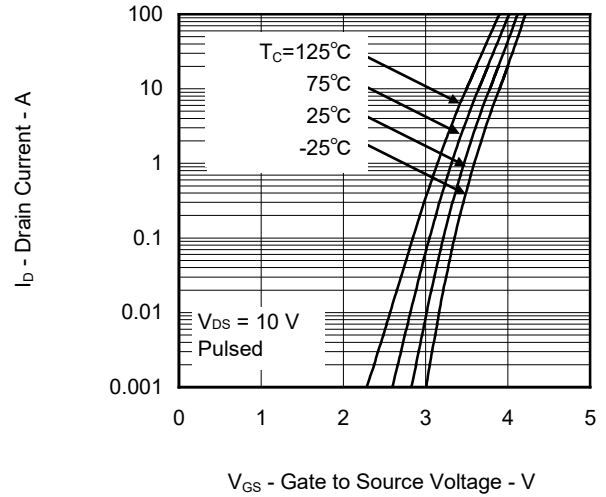


- Notes: 6. Designed target value on Renesas measurement condition. (T_c = 25°C, unless otherwise specified)
- 7. This data is the designed value on Renesas's measurement condition. Renesas recommends that operating conditions are designed according to a document "Power MOSFET/IGBT Attention of Handling Semiconductor Devices (R07ZZ0010)".
- 8. This data is the designed target maximum value on Renesas's measurement condition.

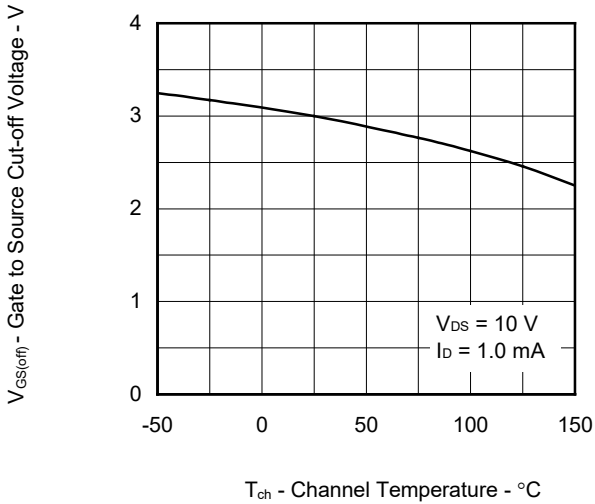
DRAIN CURRENT vs.
DRAIN TO SOURCE VOLTAGE



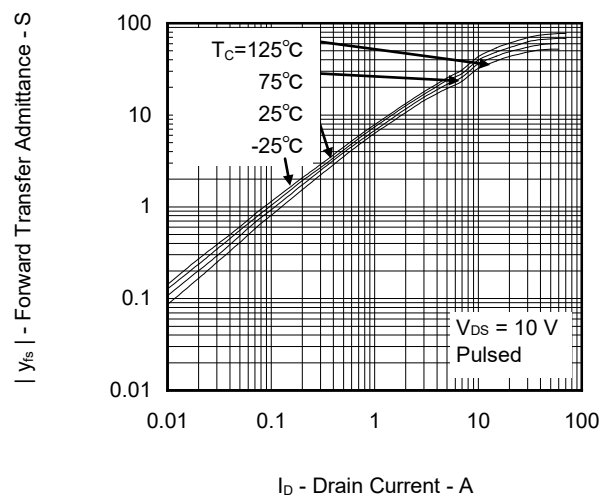
FORWARD TRANSFER
CHARACTERISTICS



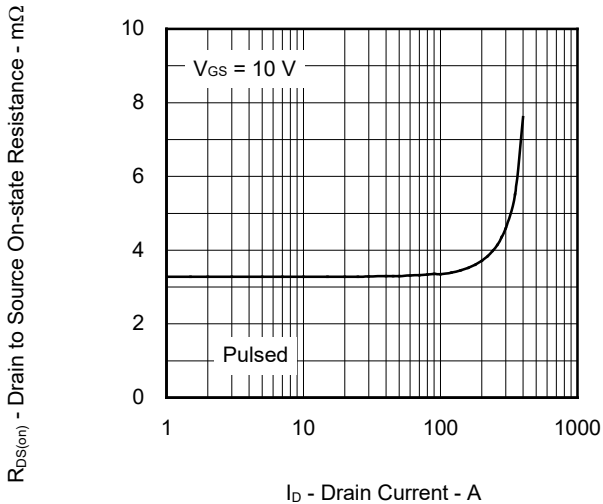
GATE TO SOURCE CUT-OFF VOLTAGE
vs. CHANNEL TEMPERATURE



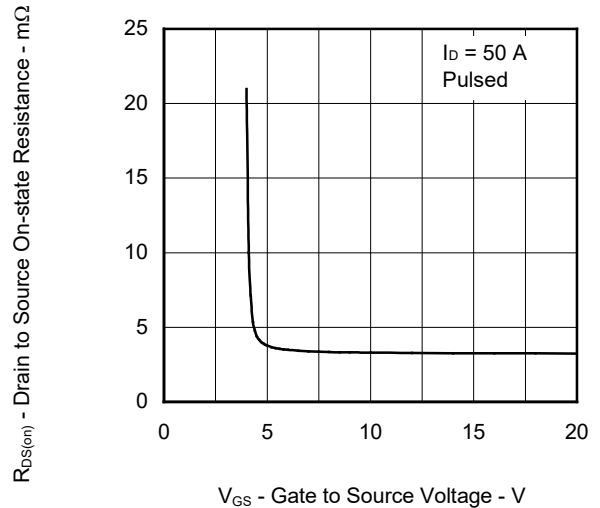
FORWARD TRANSFER ADMITTANCE vs.
DRAIN CURRENT



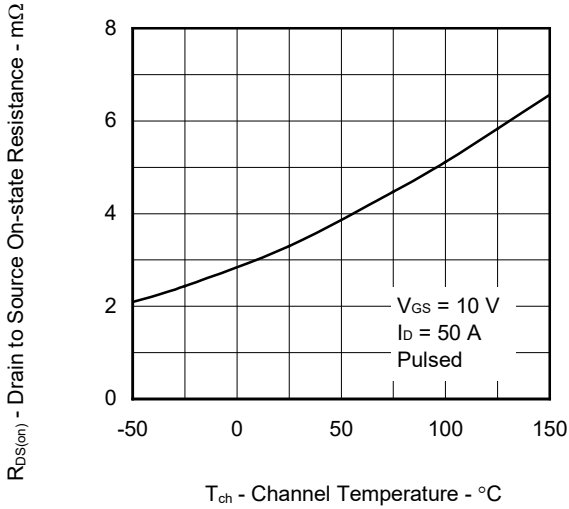
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. DRAIN CURRENT



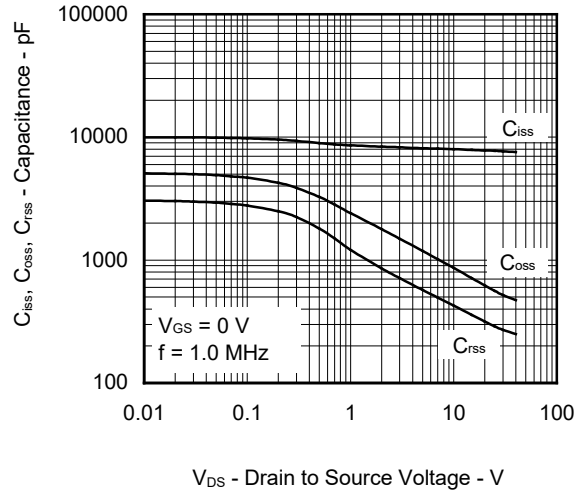
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. GATE TO SOURCE VOLTAGE



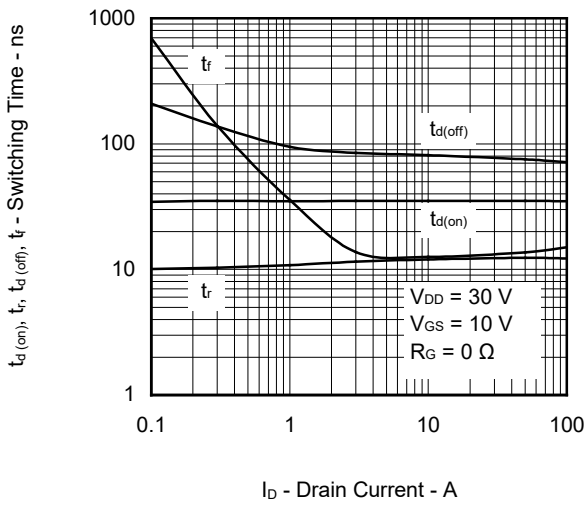
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



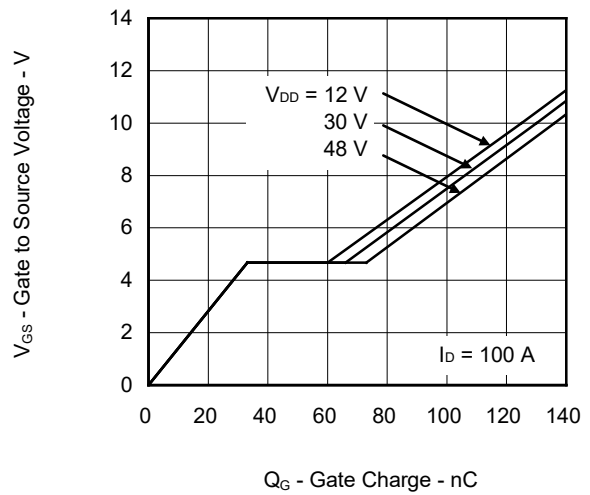
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



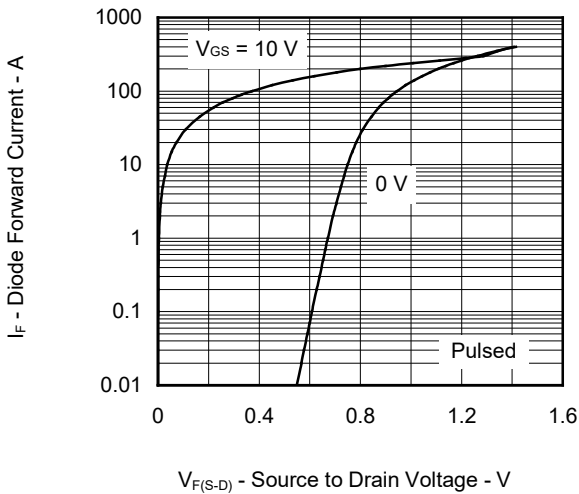
SWITCHING CHARACTERISTICS



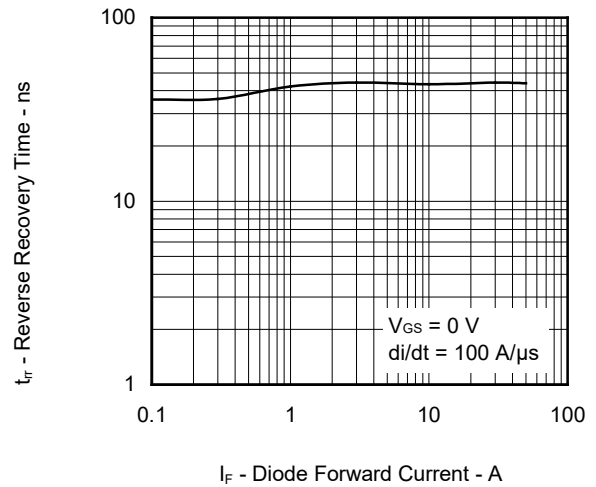
DYNAMIC INPUT CHARACTERISTICS



SOURCE TO DRAIN DIODE FORWARD VOLTAGE



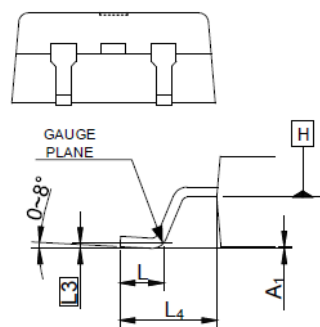
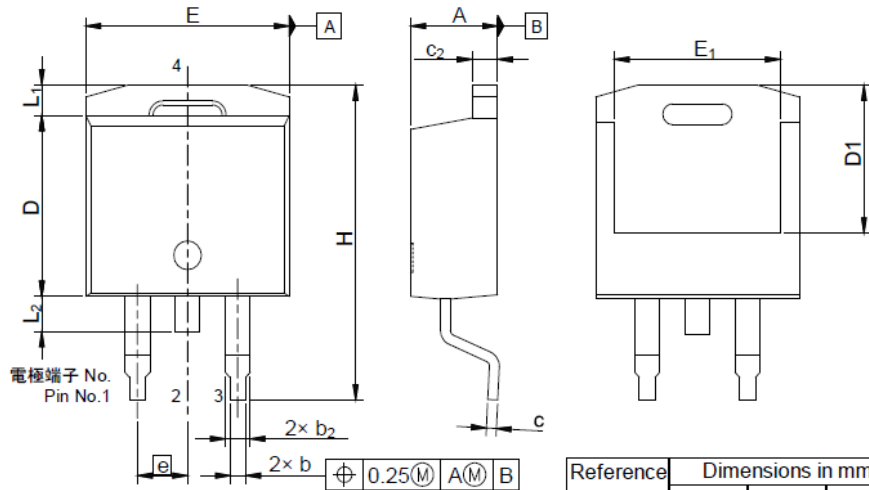
REVERSE RECOVERY TIME vs. DIODE FORWARD CURRENT



Package Drawing (Unit: mm)

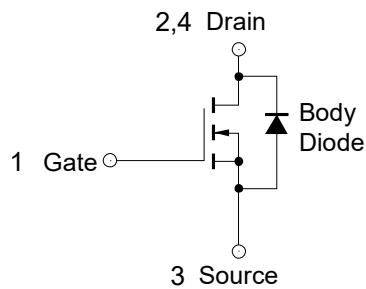
Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS (Typ) [g]
TO-263	—	PRSS0004AS-A	TO-263A	1.4

Unit: mm



Reference Symbol	Dimensions in mm		
	MIN.	NOM.	MAX.
A	4.20	-	4.60
A ₁	0.00	-	0.255
b	0.65	-	0.95
b ₂	1.12	-	1.42
c	0.381	-	0.737
c ₂	1.15	-	1.40
D	8.50	-	9.10
D ₁	6.90	-	7.50
E	10.05	-	10.65
E ₁	8.00	-	8.80
e	2.54 BSC		
H	15.00	-	15.60
L	1.90	-	2.50
L ₁	-	-	1.70
L ₂	-	-	1.78
L ₃	0.25 BSC		
L ₄	4.78	-	5.28

Equivalent Circuit



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