

1. TYPE RSR015P03
 2. STRUCTURE SILICON P-CHANNEL MOS FET
 3. APPLICATIONS SWITCHING

4. ABSOLUTE MAXIMUM RATINGS [Ta=25°C]

DRAIN-SOURCE VOLTAGE	V_{DSS}	· · ·	-30V	
GATE-SOURCE VOLTAGE	V_{GSS}	· · ·	$\pm 20V$	
DRAIN CURRENT CONTINUOUS	I_D	· · ·	$\pm 1.5A$	
PULSED	I_{DP}	· · ·	$\pm 6A$	$PW \leq 10\mu s$ DUTY CYCLE $\leq 1\%$
SOURCE CURRENT CONTINUOUS	I_S	· · ·	-0.5A	
(BODY DIODE) PULSED	I_{SP}	· · ·	-6A	$PW \leq 10\mu s$ DUTY CYCLE $\leq 1\%$
TOTAL POWER DISSIPATION	P_D	· · ·	1W	MOUNTED ON A CERAMIC BOARD
CHANNEL TEMPERATURE	T_{ch}	· · ·	150°C	
RANGE OF STRAGE TEMPERATURE	T_{stg}	· · ·	-55~150°C	

5. THERMAL RESISTANCE

CHANNEL TO AMBIENT	$R_{th(ch-a)}$	· · ·	125°C/W	MOUNTED ON A CERAMIC BOARD
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DESIGN	CHECK	APPROVAL	DATE : 28/OCT/2003	SPECIFICATION No. TSQ03120-RSR015P03
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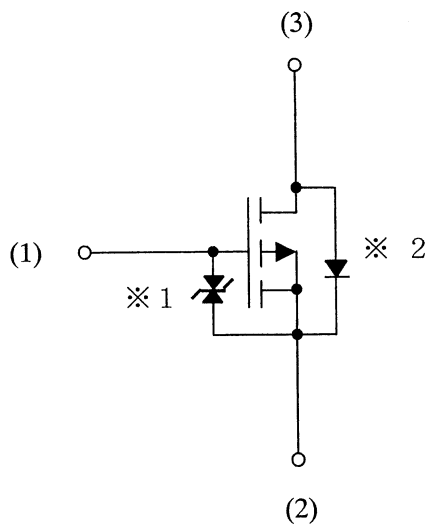
6.ELECTRICAL CHARACTERISTICS [Ta=25°C]
 《 MOSFET 》

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I _{GSS}	V _{GS} =±20V/V _{DS} =0V	-	-	±10μA
DRAIN-SOURCE BREAKDOWN VOLTAGE	V _{(BR)DSS}	I _D =-1mA/V _{GS} =0V	-30V	-	-
ZERO GATE VOLTAGE DRAIN CURRENT	I _{DSS}	V _{DS} =-30V/V _{GS} =0V	-	-	-1μA
GATE THRESHOLD VOLTAGE	V _{GS(th)}	V _{DS} =-10V/I _D =-1mA	-1.0V	-	-2.5V
STATIC DRAIN-SOURCE ON-STATE RESISTANCE	R _{DS(on)} * PULSED	I _D =-1.5A/V _{GS} =-10V	-	170mΩ	235mΩ
		I _D =-0.8A/V _{GS} =-4.5V	-	270mΩ	375mΩ
		I _D =-0.8A/V _{GS} =-4.0V	-	320mΩ	440mΩ
FORWARD TRANSFER ADMITTANCE	Y _{fs} * PULSED	V _{DS} =-10V/I _D =-0.8A	0.9S	-	-
INPUT CAPACITANCE	C _{iss}	V _{DS} =-10V V _{GS} =0V f=1MHz	-	190pF	-
OUTPUT CAPACITANCE	C _{oss}		-	45pF	-
REVERSE TRANSFER CAPACITANCE	C _{rss}		-	30pF	-
TURN-ON DELAY TIME	t _{d(on)} * PULSED	I _D =-0.8A V _{DD} ≐-15V V _{GS} =-10V R _L ≐19Ω/R _{GS} =10Ω see Fig. 1-1,1-2	-	6ns	-
RISE TIME	t _r * PULSED		-	8ns	-
TURN-OFF DELAY TIME	t _{d(off)} * PULSED		-	22ns	-
FALL TIME	t _f *PULSED		-	6ns	-
TOTAL GATE CHARGE	Q _g *PULSED	V _{DD} ≐-15V V _{GS} =-5V I _D =-1.5A R _L =10Ω/R _{GS} =10Ω see Fig. 2-1,2-2	-	2.6nC	-
GATE-SOURCE CHARGE	Q _{gs} *PULSED		-	1.0nC	-
GATE-DRAIN CHARGE	Q _{gd} *PULSED		-	0.7nC	-

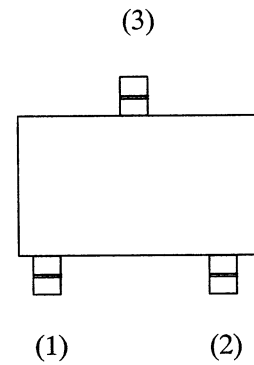
《 MOSFET 》 BODY DIODE (SOURCE-DRAIN)

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V _{SD}	I _S =-0.5A/V _{GS} =0V	-	-	-1.2V

7. INNER CIRCUIT



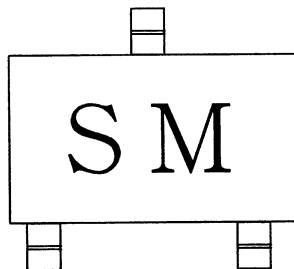
- (1) GATE
(2) SOURCE
(3) DRAIN



- ※ 1 ESD PROTECTION DIODE
※ 2 BODY DIODE

8. MARKING

“SM” MEANS RSR015P03.



9. MEASUREMENT CIRCUIT

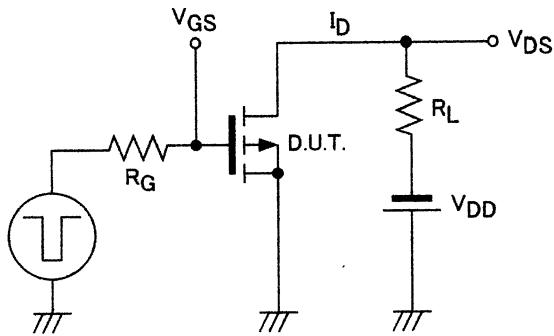


Fig.1-1 SWITCHING TIME MEASUREMENT CIRCUIT

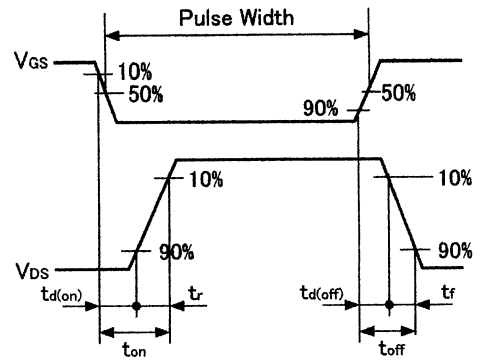


Fig.1-2 SWITCHING WAVEFORMS

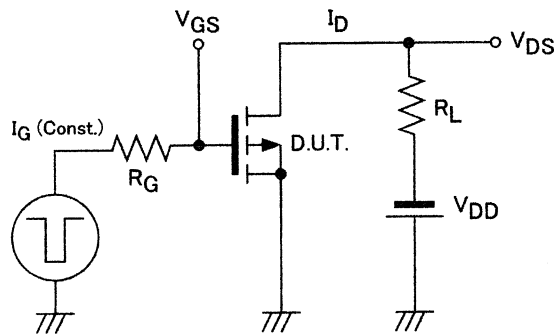


Fig.2-1 GATE CHARGE MASUREMENT CIRCUIT

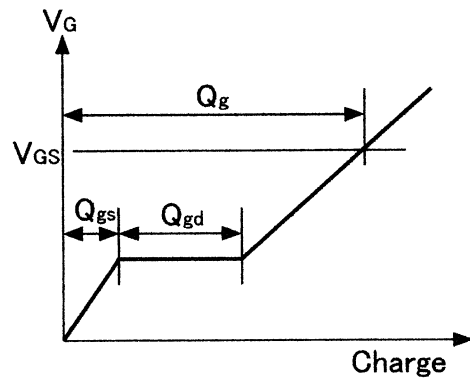


Fig.2-2 GATE CHARGE WAVEFORM