

1.TYPE US6J2

2.STRUCTURE SILICON P-CHANNEL MOS FET

3.APPLICATIONS SWITCHING

 4.ABSOLUTE MAXIMUM RATINGS [Ta=25°C]
 《 IT IS THE SAME RATINGS FOR THE Tr1 AND Tr2. 》

 DRAIN-SOURCE VOLTAGE V_{DSS} . . . -20V

 GATE-SOURCE VOLTAGE V_{GSS} . . . $\pm 12V$

 DRAIN CURRENT CONTINUOUS I_D . . . $\pm 1A$

 PULSED I_{DP} . . . $\pm 4A$ $PW \leq 10\mu s$ DUTY CYCLE $\leq 1\%$

 SOURCE CURRENT CONTINUOUS I_S . . . -0.4A
 (BODY DIODE)

 PULSED I_{SP} . . . -4A $PW \leq 10\mu s$ DUTY CYCLE $\leq 1\%$

 TOTAL POWER DISSIPATION P_D . . . 1.0W / TOTAL
 0.7W / ELEMENT
 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 / TOTAL
 179°C/W / ELEMENT
 MOUNTED ON A CERAMIC BOARD

DESIGN

CHECK

APPROVAL

DATE : 29/SEP/2003

SPECIFICATION No. TSQ03125-US6J2

REV. : 0

ROHM CO., LTD.

6.ELECTRICAL CHARACTERISTICS [Ta=25°C]

《 IT IS THE SAME CHARACTERISTICS FOR THE Tr1 AND Tr2 》

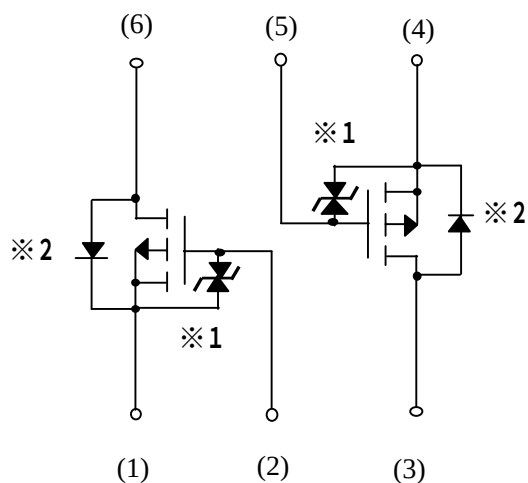
PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I_{GSS}	$V_{GS} = \pm 12V / V_{DS} = 0V$	-	-	$\pm 10\mu A$
DRAIN-SOURCE BREAKDOWN VOLTAGE	$V_{(BR)DSS}$	$I_D = -1mA / V_{GS} = 0V$	-20V	-	-
ZERO GATE VOLTAGE DRAIN CURRENT	I_{DSS}	$V_{DS} = -20V / V_{GS} = 0V$	-	-	-1 μA
GATE THRESHOLD VOLTAGE	$V_{GS(th)}$	$V_{DS} = -10V / I_D = -1mA$	-0.7V	-	-2.0V
STATIC DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$ * PULSED	$I_D = -1A / V_{GS} = -4.5V$	-	280m Ω	390m Ω
		$I_D = -1A / V_{GS} = -4V$	-	310m Ω	430m Ω
		$I_D = -0.5A / V_{GS} = -2.5V$	-	570m Ω	800m Ω
FORWARD TRANSFER ADMITTANCE	$ Y_{fs} $ * PULSED	$V_{DS} = -10V / I_D = -0.5A$	0.7S	-	-
INPUT CAPACITANCE	C_{iss}	$V_{DS} = -10V$ $V_{GS} = 0V$ $f = 1MHz$	-	150pF	-
OUTPUT CAPACITANCE	C_{oss}		-	20pF	-
REVERSE TRANSFER CAPACITANCE	C_{rss}		-	20pF	-
TURN-ON DELAY TIME	$t_{d(on)}$ * PULSED	$I_D = -0.5A$ $V_{DD} = -15V$ $V_{GS} = -4.5V$ $R_L = 30\Omega / R_G = 10\Omega$ see Fig. 1-1,1-2	-	9ns	-
RISE TIME	t_r * PULSED		-	8ns	-
TURN-OFF DELAY TIME	$t_{d(off)}$ * PULSED		-	25ns	-
FALL TIME	t_f * PULSED		-	10ns	-
TOTAL GATE CHARGE	Q_g * PULSED	$V_{DD} = -15V$ $V_{GS} = -4.5V$ $I_D = -1A$ $R_L = 15\Omega / R_G = 10\Omega$ see Fig. 2-1,2-2	-	2.1nC	-
GATE-SOURCE CHARGE	Q_{gs} * PULSED		-	0.5nC	-
GATE-DRAIN CHARGE	Q_{gd} * PULSED		-	0.5nC	-

BODY DIODE (SOURCE-DRAIN)

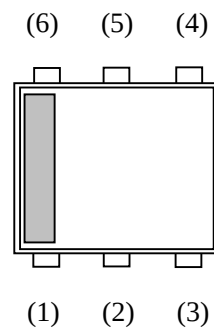
《 IT IS THE SAME CHARACTERISTICS FOR THE Tr1 AND Tr2 》

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V_{SD}	$I_S = -0.4A / V_{GS} = 0V$	-	-	-1.2V

7. INNER CIRCUIT

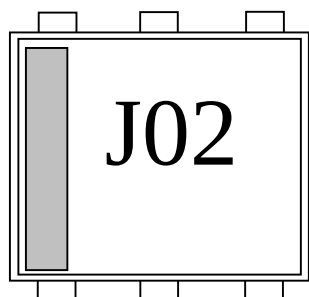


- (1) Tr1 SOURCE
- (2) Tr1 GATE
- (3) Tr2 DRAIN
- (4) Tr2 SOURCE
- (5) Tr2 GATE
- (6) Tr1 DRAIN



- ※ 1 ESD PROTECTION DIODE
- ※ 2 BODY DIODE

8. MARKING



“J02” MEANS US6J2.

9.MEASUREMENT CIRCUIT

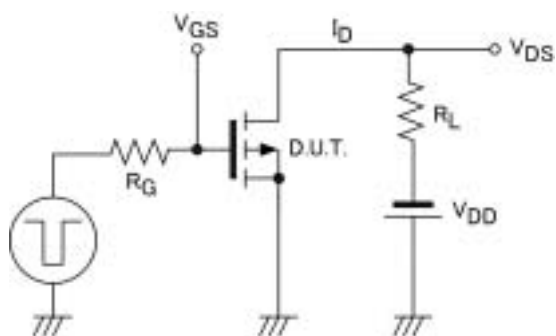


Fig.1-1 SWITCHING TIME MEASUREMENT CIRCUIT

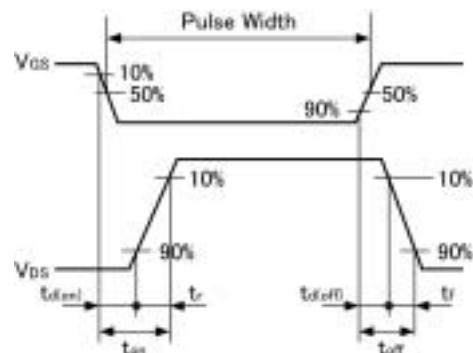


Fig.1-2 SWITCHING WAVEFORMS

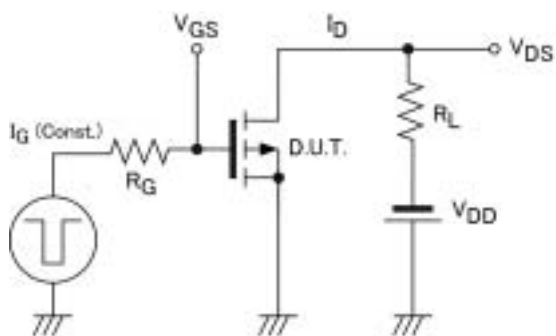


Fig.2-1 GATE CHARGE MASUREMENT CIRCUIT

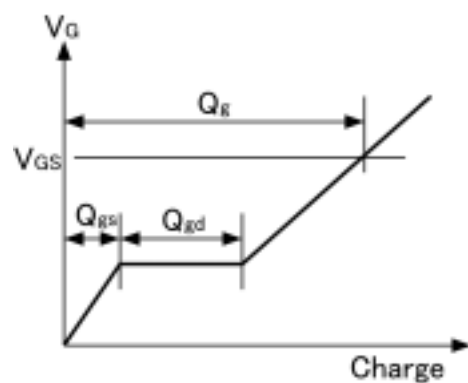


Fig.2-2 GATE CHARGE WAVEFORM