

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  $V_{DSS}$  . . . -20VGATE-SOURCE VOLTAGE  $V_{GSS}$  . . .  $\pm 12V$ DRAIN CURRENT CONTINUOUS  $I_D$  . . .  $\pm 1A$ PULSED  $I_{DP}$  . . .  $\pm 4A$  PW 10 $\mu s$  DUTY CYCLE 1%SOURCE CURRENT CONTINUOUS  $I_S$  . . . -0.4A  
(BODY DIODE)PULSED  $I_{SP}$  . . . -4A PW 10 $\mu s$  DUTY CYCLE 1%TOTAL POWER DISSIPATION  $P_D$  . . . 1.0W / TOTAL  
0.7W / ELEMENT  
MOUNTED ON A CERAMIC BOARDCHANNEL TEMPERATURE  $T_{ch}$  . . . 150°CRANGE OF STRAGE TEMPERATURE  $T_{stg}$  . . . - 55 ~ 150°C

5.THERMAL RESISTANCE

CHANNEL TO AMBIENT  $R_{th(ch-a)}$  . . . 125°C/W / TOTAL  
179 /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 》

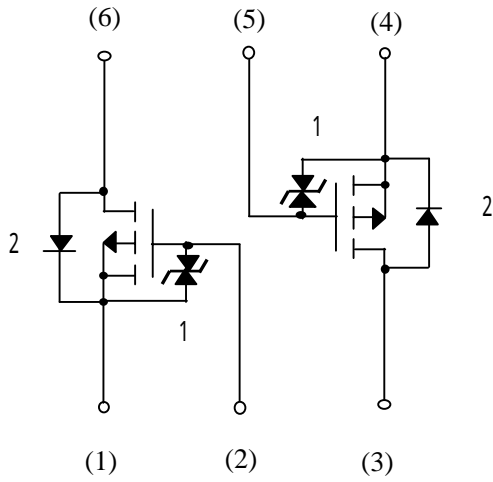
PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	$I_{GSS}$	$V_{GS} = \pm 12V / V_{DS} = 0V$	-	-	$\pm 10\mu A$
DRAIN-SOURCE BREAKDOWN VOLTAGE	$V_{(BR)DSS}$	$I_D = -1mA / V_{GS} = 0V$	-20V	-	-
ZERO GATE VOLTAGE DRAIN CURRENT	$I_{DSS}$	$V_{DS} = -20V / V_{GS} = 0V$	-	-	-1 $\mu A$
GATE THRESHOLD 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 $\Omega$	390m $\Omega$
		$I_D = -1A / V_{GS} = -4V$	-	310m $\Omega$	430m $\Omega$
		$I_D = -0.5A / V_{GS} = -2.5V$	-	570m $\Omega$	800m $\Omega$
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)

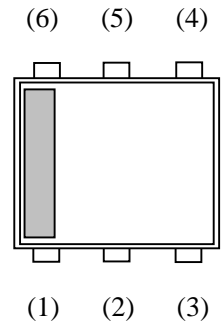
《 IT IS THE SAME CHARACTERISTICS FOR THE Tr1 AND Tr2 》

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

### 7. INNER CIRCUIT

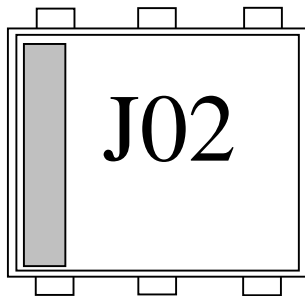


- (1) Tr1 SOURCE
- (2) Tr1 GATE
- (3) Tr2 DRAIN
- (4) Tr2 SOURCE
- (5) Tr2 GATE
- (6) Tr1 DRAIN



- 1 ESD PROTECTION DIODE
- 2 BODY DIODE

### 8. MARKING



“J02” MEANS US6J2.

9.MEASUREMENT CIRCUIT

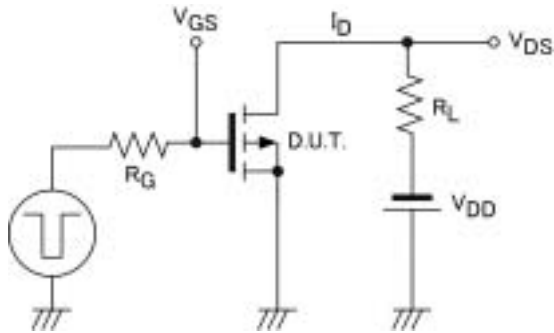


Fig.1-1 SWITCHING TIME MEASUREMENT CIRCUIT

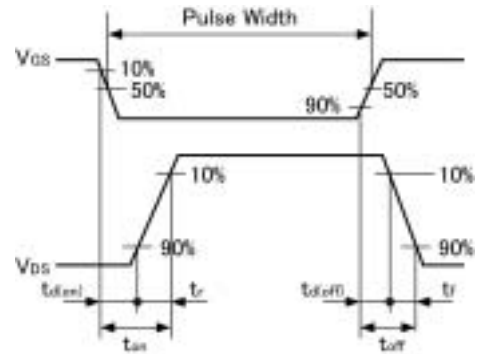


Fig.1-2 SWITCHING WAVEFORMS

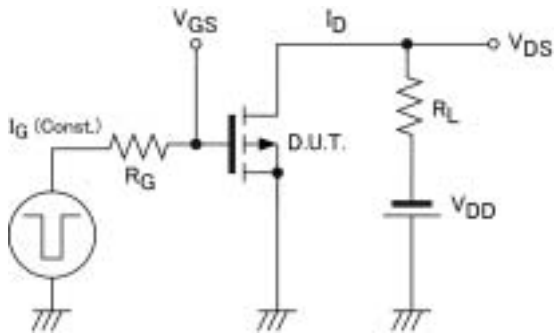


Fig.2-1 GATE CHARGE MASUREMENT CIRCUIT

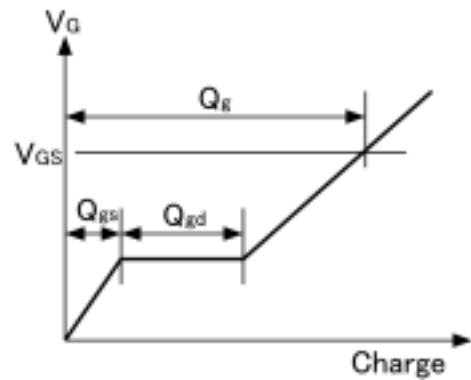




Fig.2-2 GATE CHARGE WAVEFORM

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View US6J2TR](#) on WIN SOURCE
-  [Rohm Semiconductor](#) Information

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management