THE DATASHEET OF

QS6J1TR

1.TYPE QS6J1

2.STRUCTURE SILICON P-CHANNEL MOS FET

3.APPLICATIONS SWITCHING

4.ABSOLUTE MAXIMUM RATINGS [Ta=25°C]

《 MOSFET 》

DRAIN-SOURCE VOLTAGE		V_{DSS}	• • •	-20V
GATE-SOURCE VOLTAGE		V_{GSS}	• • •	±12V
DRAIN CURRENT	CONTINUOUS	I_D	• • •	±1.5A
	PULSED	I_{DP}	• • •	±6.0A PW≦10μs DUTY CYCLE≦1%
SOURCE CURRENT (BODY DIODE)	CONTINUOUS	I_S	• • •	-0.75A
	PULSED	I_{SP}	• • •	-6.0A PW≦10μs DUTY CYCLE≦1%
TOTAL POWER DISSIPATION		P_D	• • •	1.25W/TOTAL 0. 9W/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	$R_{th(ch-a)}$	• • •	100°C/W/TOTAL 139°C/W/ELEMENT MOUNTED ON A CERAMIC BOARD

6.ELECTRICAL CHARACTERISTICS [Ta=25°C]

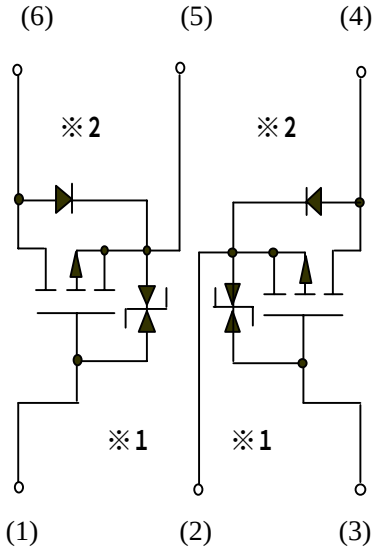
《 MOSFET 》

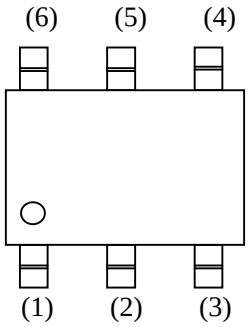
PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I_{GSS}	V_{GS}=±12V/V_{DS}=0V	-	-	±10μA
DRAIN-SOURCE BREAKDOWN VOLTAGE	$V_{(BR)DSS}$	I_D=-1mA/V_{GS}=0V	-20V	-	-
ZERO GATE VOLTAGE DRAIN CURRENT	I_{DSS}	V_{DS}=-20V/V_{GS}=0V	-	-	-1μA
GATE THRESHOLD VOLTAGE	$V_{GS(th)}$	V_{DS}=-10V/I_D=-1mA	-0.7V	-	-2.0V
STATIC DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$ * PULSED	I_D=-1.5A/V_{GS}=-4.5V	-	155mΩ	215mΩ
		I_D=-1.5A/V_{GS}=-4V	-	170mΩ	235mΩ
		I_D=-0.75A/V_{GS}=-2.5V	-	310mΩ	430mΩ
FORWARD TRANSFER ADMITTANCE	$\|Y_{fs}\|$ * PULSED	V_{DS}=-10V/I_D=-0.75A	1.0S	-	-
INPUT CAPACITANCE	C_{iss}	V_{DS}=-10V V_{GS}=0V f=1MHz	-	270pF	-
OUTPUT CAPACITANCE	C_{oss}		-	40pF	-
REVERSE TRANSFER CAPACITANCE	C_{rss}		-	35pF	-
TURN-ON DELAY TIME	$t_{d(on)}$ * PULSED	I_D=-0.75A V_{DD} -15V V_{GS}=-4.5V R_L=20Ω/R_G=10Ω see Fig.1-1,1-2	-	10ns	-
RISE TIME	t_r * PULSED		-	12ns	-
TURN-OFF DELAY TIME	$t_{d(off)}$ * PULSED		-	45ns	-
FALL TIME	t_f * PULSED		-	20ns	-
TOTAL GATE CHARGE	Q_g * PULSED	V_{DD} -15V V_{GS}=-4.5V I_D=-1.5A R_L=10Ω/R_G=10Ω see Fig.2-1,2-2	-	3.0nC	-
GATE-SOURCE CHARGE	Q_{gs} * PULSED		-	0.8nC	-
GATE-DRAIN CHARGE	Q_{gd} * PULSED		-	0.85nC	-

《 MOSFET 》BODY DIODE (SOURCE-DRAIN)

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V_{SD}	I_S=-0.75A/V_{GS}=0V	-	-	-1.2V

7.INNER CIRCUIT

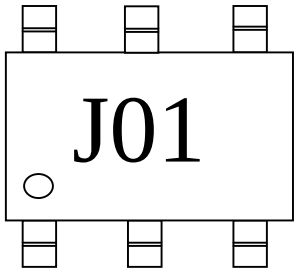




(1) Tr1 GATE
(2) Tr2 SOURCE
(3) Tr2 GATE
(4) Tr2 DRAIN
(5) Tr1 SOURCE
(6) Tr1 DRAIN

※ **1** ESD PROTECTION DIODE
※ **2** BODY DIODE

8. MARKING



" J01 "MEANS QS6J1.

9.MEASUREMENT CIRCUIT

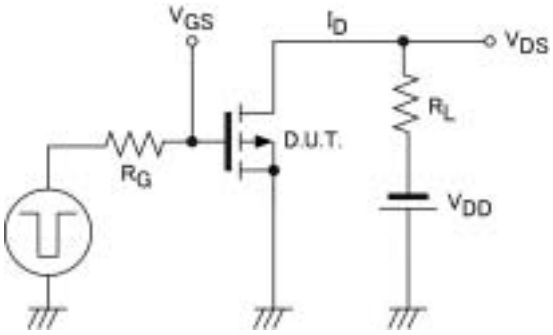


Fig.1-1 SWITCHING TIME MEASUREMENT CIRCUIT

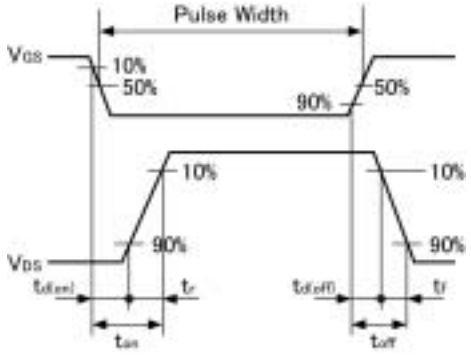


Fig.1-2 SWITCHING WAVEFORMS

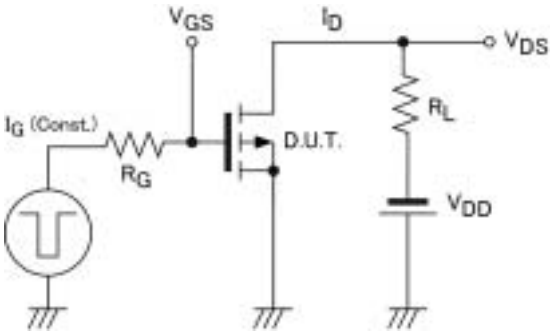


Fig.2-1 GATE CHARGE MASUREMENT CIRCUIT

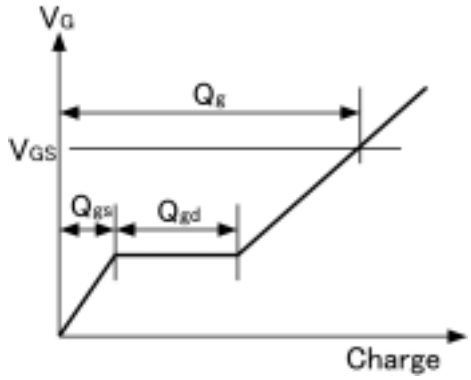


Fig.2-2 GATE CHARGE WAVEFORM

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