1 TYPE SP8K32

2 STRUCTURE SILICON N-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}	• • •	60V
GATE-SOURCE VOLTAGE		V_{GSS}	• • •	20V
DRAIN CURRENT	CONTINUOUS	I_D	• • •	±4.5A
	PULSED	I_{DP}	• • •	±18A PW≦10μs DUTY CYCLE≦1%
SOURCE CURRENT (BODY DIODE)	CONTINUOUS	I_S	• • •	1.0A
	PULSED	I_{SP}	• • •	18A PW≦10μs DUTY CYCLE≦1%
TOTAL POWER DISSIPATION		P_D	• • •	2.0W / TOTAL MOUNTED ON A CERAMIC BOARD
CHANNEL TEMPERATURE		T_{ch}	• • •	150°C
RANGE OF STORAGE TEMPERATURE		T_{stg}	• • •	−55～150°C

5 ELECTRICAL CHARACTERISTICS [Ta=25°C]

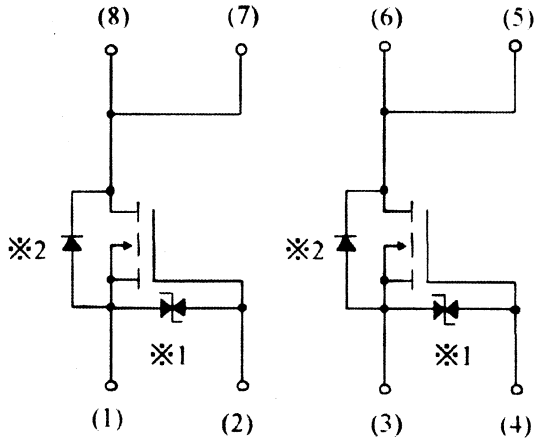
《 IT IS THE SAME CHARACTERISTICS FOR THE Tr1 AND Tr2 》

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I_{GSS}	V_{GS}=20V/V_{DS}=0V	—	—	10μA
DRAIN-SOURCE BREAKDOWN VOLTAGE	$V_{(BR)DSS}$	I_D=1mA/V_{GS}=0V	60V	—	—
ZERO GATE VOLTAGE DRAIN CURRENT	I_{DSS}	V_{DS}=60V/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=4.5A/V_{GS}=10V	—	46mΩ	65mΩ
		I_D=4.5A/V_{GS}=4.5V	—	52mΩ	73mΩ
		I_D=4.5A/V_{GS}=4.0V	—	55mΩ	77mΩ
FORWARD TRANSFER ADMITTANCE	$\|Y_{fs}\|$ * PULSED	V_{DS}=10V/I_D=4.5A	4.0S	—	—
INPUT CAPACITANCE	C_{iss}	V_{DS}=10V V_{GS}=0V f=1MHz	—	500pF	—
OUTPUT CAPACITANCE	C_{oss}		—	120pF	—
REVERSE TRANSFER CAPACITANCE	C_{rss}		—	55pF	—
TURN-ON DELAY TIME	$t_{d(on)}$ * PULSED	V_{DD}≒30V I_D=2.3A V_{GS}=10V R_L=13Ω R_G=10Ω See Fig 1-1 1-2	—	12ns	—
RISE TIME	t_r * PULSED		—	18ns	—
TURN-OFF DELAY TIME	$t_{d(off)}$ * PULSED		—	40ns	—
FALL TIME	t_f * PULSED		—	13ns	—
TOTAL GATE CHARGE	Q_g * PULSED	V_{DD}≒30V I_D=4.5A V_{GS}=5V R_L=6.7Ω/R_G=10Ω See Fig 2-1 2-2	—	7.0nC	10nC
GATE-SOURCE CHARGE	Q_{gs} * PULSED		—	1.6nC	—
GATE-DRAIN CHARGE	Q_{gd} * PULSED		—	2.5nC	—

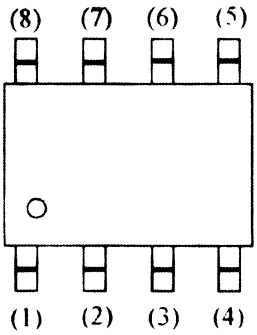
BODY DIODE CHARACTERISTICS (SOURCE-DRAIN)

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V_{SD} * PULSED	I_S=4.5A/V_{GS}=0V	—	—	1.2V

6 INNER CIRCUIT

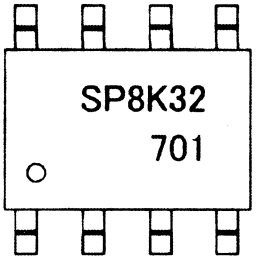


(1) Tr1 SOURCE
(2) Tr1 GATE
(3) Tr2 SOURCE
(4) Tr2 GATE
(5) Tr2 DRAIN
(6) Tr2 DRAIN
(7) Tr1 DRAIN
(8) Tr1 DRAIN



※1 ESD PROTECTION DIODE
※2 BODY DIODE

7 MARKING



"701" MEANS PRODUCTION YEAR AND WEEK.

"○" MEANS 1pin MARK.

8 MEASUREMENT CIRCUIT

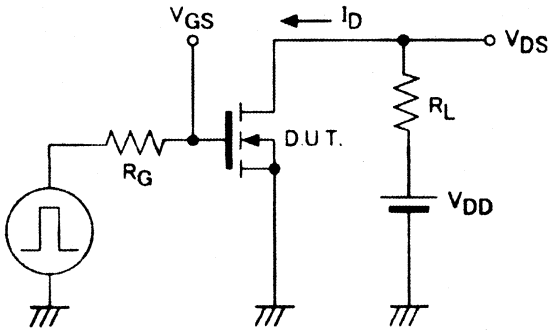


Fig.1-1 SWITCHING TIME MEASUREMENT CIRCUIT

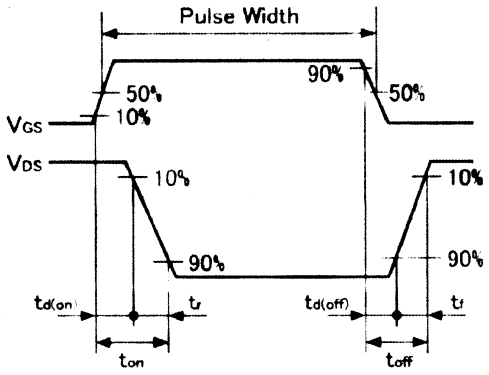


Fig 1-2 SWITCHING WAVEFORMS

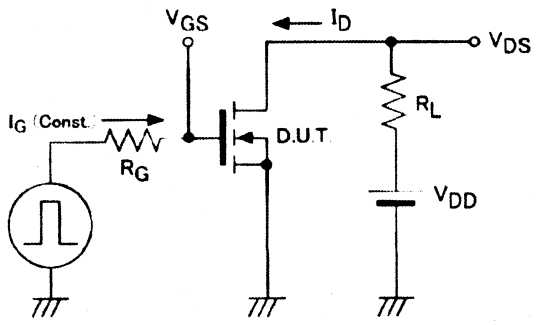


Fig.2-1 GATE CHARGE MEASUREMENT CIRCUIT

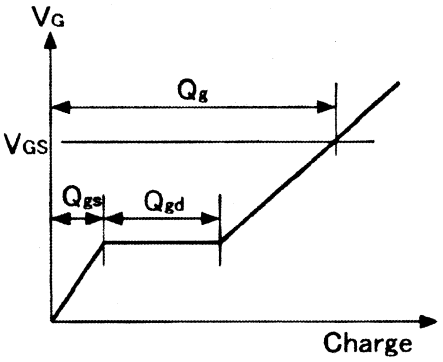


Fig.2-2 GATE CHARGE WAVEFORM