1.TYPE RCX510N25

2.STRUCTURE SILICON N-CHANNEL MOS FET

3.APPLICATIONS SWITCHING

4.ABSOLUTE MAXIMUM RATINGS [Ta=25℃]

DRAIN-SOURCE VOLTAGE		V_{DSS}	・・・	250V
GATE-SOURCE VOLTAGE		V_{GSS}	・・・	±30V
DRAIN CURRENT	CONTINUOUS	I_D	・・・	±51A*
	PULSED	I_{DP}	・・・	±204A* PW≦10μs DUTY CYCLE≦1%
SOURCE CURRENT (BODY DIODE)	CONTINUOUS	I_S	・・・	51A*
	PULSED	I_{SP}	・・・	204A* PW≦10μs DUTY CYCLE≦1%
TOTAL POWER DISSIPATION		P_D	・・・	40W (Tc=25℃)
CHANNEL TEMPERATURE		T_{ch}	・・・	150℃
RANGE OF STORAGE TEMPERATURE		T_{stg}	・・・	−55～150℃

5. THERMAL RESISTANCE

CHANNEL TO CASE	$R_{th(ch-c)}$	・・・	3.13°C/W

* Limited only by maximum channel temperature allowed

6.ELECTRICAL CHARACTERISTICS [Ta=25℃]

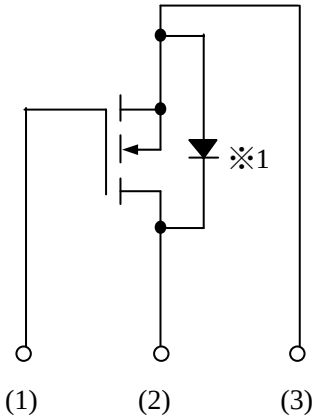
《MOSFET.》

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I_{GSS}	V_{GS}±30V/V_{DS}=0V	−	−	±100nA
DRAIN-SOURCE BREAKDOWN VOLTAGE	$V_{(BR)DSS}$	I_D=1mA /V_{GS}=0V	250V	−	−
ZERO GATE VOLTAGE DRAIN CURRENT	I_{DSS}	V_{DS}=250V/V_{GS}=0V	−	−	10μA
GATE THRESHOLD VOLTAGE	$V_{GS(th)}$	V_{DS}=10V/I_D=1mA	3.0V	−	5.0V
STATIC DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$ * PULSED	I_D=25.5A/V_{GS}=10V	−	48mΩ	65mΩ
FORWARD TRANSFER ADMITTANCE	$\|Y_{fs}\|$ * PULSED	V_{DS}=10V/I_D=25.5A	15S	−	−
INPUT CAPACITANCE	C_{iss}	V_{DS}=25V V_{GS}=0V f=1MHz	−	7000pF	−
OUTPUT CAPACITANCE	C_{oss}		−	350pF	−
REVERSE TRANSFER CAPACITANCE	C_{rss}		−	200pF	−
TURN-ON DELAY TIME	$t_{d(on)}$ * PULSED	V_{DD}≒125V I_D=25.5A V_{GS}=10V R_L=4.9Ω R_G=10Ω see Fig. 1-1,1-2	−	65ns	−
RISE TIME	t_r * PULSED		−	300ns	−
TURN-OFF DELAY TIME	$t_{d(off)}$ * PULSED		−	170ns	−
FALL TIME	t_f * PULSED		−	210ns	−
TOTAL GATE CHARGE	Q_g * PULSED	V_{DD}≒125V I_D=51A V_{GS}=10V R_L=2.5Ω/R_G=10Ω See Fig.2-1,2-2	−	120nC	−
GATE-SOURCE CHARGE	Q_{gs} * PULSED		−	40nC	−
GATE-DRAIN CHARGE	Q_{gd} * PULSED		−	40nC	−

BODY DIODE (SOURCE-DRAIN)

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V_{SD} * PULSED	I_S=51A/V_{GS}=0V	−	−	1.5V

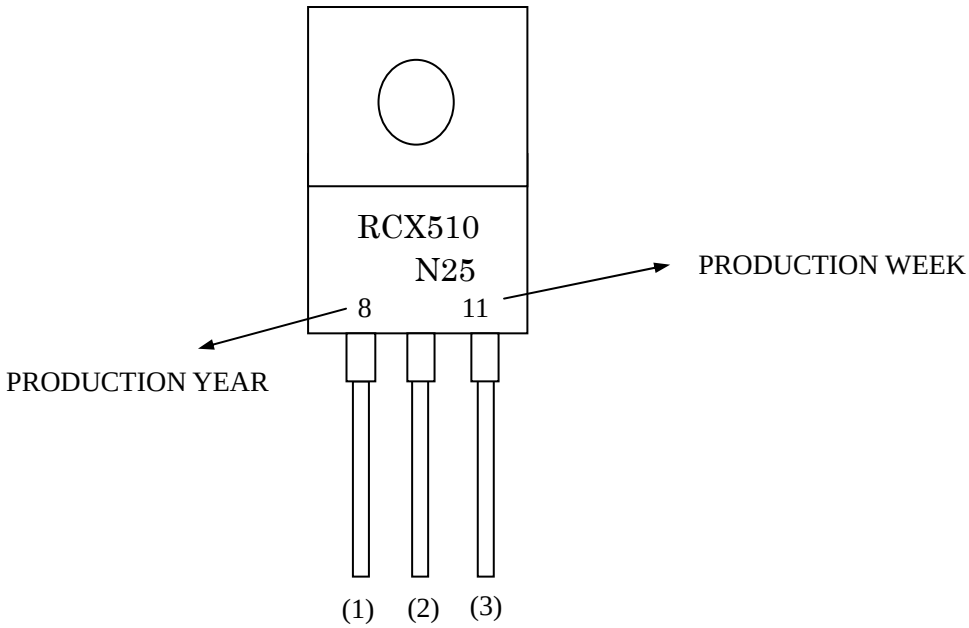
7.INNER CIRCUIT



※ 1 BODY DIODE

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

8.MARKING



9.MEASUREMENT CIRCUIT

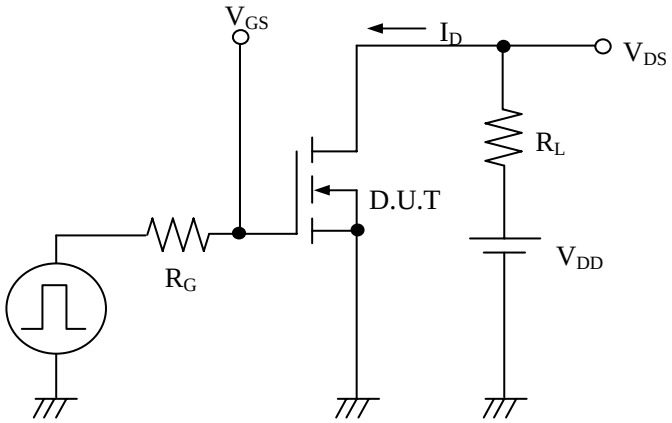


Fig.1-1 SWITCHING TIME MEASUREMENT CIRCUIT

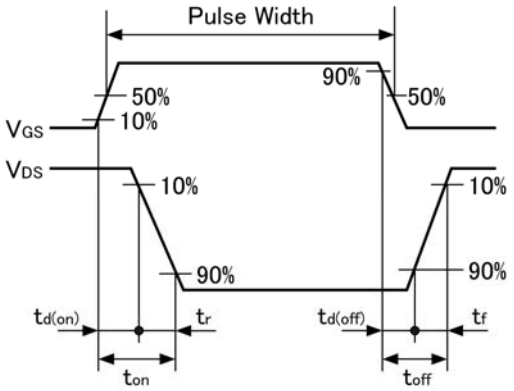


Fig.1-2 SWITCHING WAVEFORMS

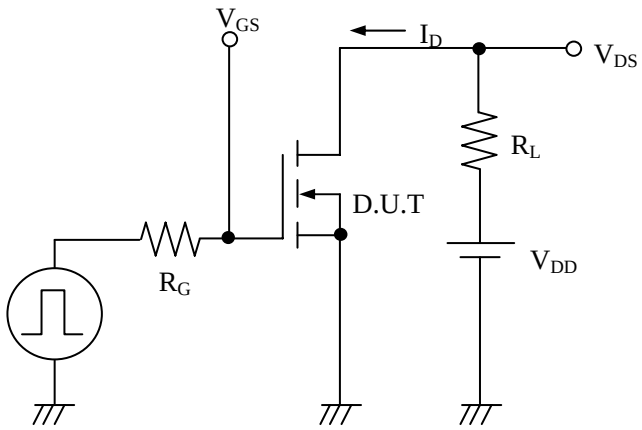


Fig.2-1 GATE CHARGE MEASUREMENT CIRCUIT

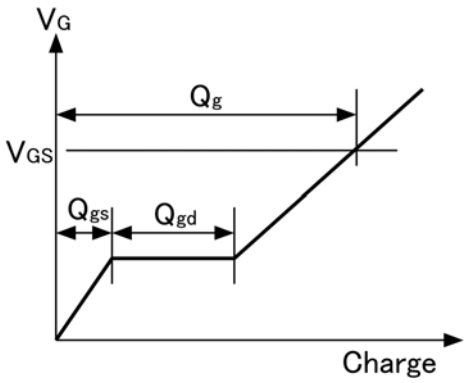


Fig.2-2 GATE CHARGE WAVEFORM