

- 1. TYPE SP8M8
- 2. STRUCTURE SILICON N-CHANNEL / P-CHANNEL MOS FET
- 3. APPLICATIONS SWITCHING

4. ABSOLUTE MAXIMUM RATINGS [Ta=25°C]
《 Tr1 : Nch 》

DRAIN-SOURCE VOLTAGE		VDSS	. . .	30V		
GATE-SOURCE VOLTAGE		VGSS	. . .	±20V		
DRAIN CURRENT	CONTINUOUS	ID	. . .	±6.0A		
	PULSED	IDP	. . .	±24A	PW ≤ 10 μs	DUTY CYCLE ≤ 1%
SOURCE CURRENT	CONTINUOUS	IS	. . .	1.6A		
(BODY DIODE)	PULSED	ISP	. . .	24A	PW ≤ 10 μs	DUTY CYCLE ≤ 1%

《 Tr2 : Pch 》

DRAIN-SOURCE VOLTAGE		VDSS	. . .	-30V		
GATE-SOURCE VOLTAGE		VGSS	. . .	±20V		
DRAIN CURRENT	CONTINUOUS	ID	. . .	±4.5A		
	PULSED	IDP	. . .	±18A	PW ≤ 10 μs	DUTY CYCLE ≤ 1%
SOURCE CURRENT	CONTINUOUS	IS	. . .	-1.6A		
(BODY DIODE)	PULSED	ISP	. . .	-18A	PW ≤ 10 μs	DUTY CYCLE ≤ 1%

《 Tr1 AND Tr2 》

TOTAL POWER DISSIPATION		PD	. . .	2.0W	MOUNTED ON A CERAMIC BOARD	
CHANNEL TEMPERATURE		Tch	. . .	150°C		
RANGE OF STRAGE TEMPERATURE		Tstg	. . .	-55~150°C		

5. THERMAL RESISTANCE

CHANNEL TO AMBIENT		Rth(ch-a)	. . .	62.5°C/W	MOUNTED ON A CERAMIC BOARD	
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DESIGN <i>H. Tamada</i>	CHECK <i>A. Tsubaki</i>	APPROVAL <i>S. Higashida</i>	DATE : 14/SEP/2007	SPECIFICATION No. TSQ03080-SP8M8
			REV. : 2	ROHM CO., LTD.

6. ELECTRICAL CHARACTERISTICS [Ta=25°C]
 《 CHARACTERISTICS FOR THE Tr1 (Nch). 》

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I _{GSS}	V _{GS} =±20V/V _{DS} =0V	—	—	±10 μA
DRAIN-SOURCE BREAKDOWN VOLTAGE	V(BR) _{DSS}	I _D =1mA/V _{GS} =0V	30V	—	—
ZERO GATE VOLTAGE DRAIN CURRENT	I _{DSS}	V _{DS} =30V/V _{GS} =0V	—	—	1 μA
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 =6A/V _{GS} =10V	—	21mΩ	30mΩ
		I _D =6A/V _{GS} =4.5V	—	30mΩ	42mΩ
		I _D =6A/V _{GS} =4.0V	—	33mΩ	47mΩ
FORWARD TRANSFER ADMITTANCE	Y _{fs} * PULSED	V _{DS} =10V/I _D =6A	4.0S	—	—
INPUT CAPACITANCE	C _{iss}	V _{DS} =10V/V _{GS} =0V f=1MHz	—	520pF	—
OUTPUT CAPACITANCE	C _{oss}		—	150pF	—
REVERSE TRANSFER CAPACITANCE	C _{rss}		—	95pF	—
TURN-ON DELAY TIME	t _{d(on)} * PULSED	I _D =3A V _{DD} ≐15V V _{GS} =10V R _L =5.0Ω R _{GS} =10Ω	—	9ns	—
RISE TIME	t _r * PULSED		—	21ns	—
TURN-OFF DELAY TIME	t _{d(off)} * PULSED		—	36ns	—
FALL TIME	t _f * PULSED		—	13ns	—
TOTAL GATE CHARGE	Q _g * PULSED	V _{DD} ≐15V V _{GS} =5V I _D =6A	—	7.2nC	—
GATE-SOURCE CHARGE	Q _{gs} * PULSED		—	1.8nC	—
GATE-DRAIN CHARGE	Q _{gd} * PULSED		—	2.8nC	—

BODY DIODE (SOURCE-DRAIN)

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V _{SD} * PULSED	I _S =6.4A/V _{GS} =0V	—	—	1.2V

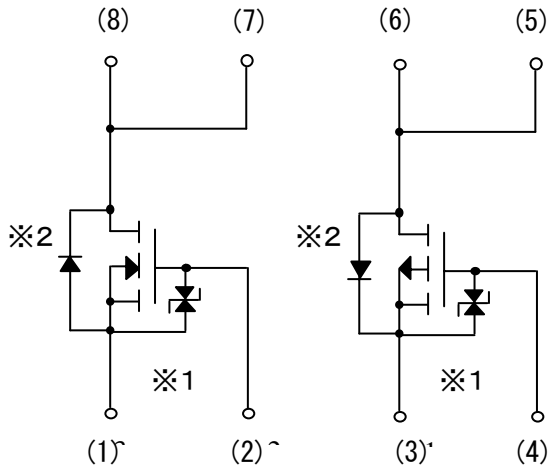
7. ELECTRICAL CHARACTERISTICS [Ta=25°C]
 《 CHARACTERISTICS FOR THE Tr2 (Pch). 》

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
GATE-SOURCE LEAKAGE	I _{GSS}	V _{GS} =±20V/V _{DS} =0V	—	—	±10 μA
DRAIN-SOURCE BREAKDOWN VOLTAGE	V (BR) DSS	I _D =-1mA/V _{GS} =0V	-30V	—	—
ZERO GATE VOLTAGE DRAIN CURRENT	I _{DSS}	V _{DS} =-30V/V _{GS} =0V	—	—	-1 μA
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	—	40mΩ	56mΩ
		I _D =-2.5A/V _{GS} =-4.5V	—	57mΩ	80mΩ
		I _D =-2.5A/V _{GS} =-4.0V	—	65mΩ	90mΩ
FORWARD TRANSFER ADMITTANCE	Y _{fs} * PULSED	V _{DS} =-10V/I _D =-2.5A	3.5S	—	—
INPUT CAPACITANCE	C _{iss}	V _{DS} =-10V/V _{GS} =0V f=1MHz	—	850pF	—
OUTPUT CAPACITANCE	C _{oss}		—	190pF	—
REVERSE TRANSFER CAPACITANCE	C _{rss}		—	120pF	—
TURN-ON DELAY TIME	t _{d(on)} * PULSED	I _D =-2.5A V _{DD} ≐-15V V _{GS} =-10V R _L =6.0Ω R _{GS} =10Ω	—	10ns	—
RISE TIME	t _r * PULSED		—	25ns	—
TURN-OFF DELAY TIME	t _{d(off)} * PULSED		—	60ns	—
FALL TIME	t _f * PULSED		—	25ns	—
TOTAL GATE CHARGE	Q _g * PULSED	V _{DD} ≐-15V V _{GS} =-5V I _D =-4.5A	—	8.5nC	—
GATE-SOURCE CHARGE	Q _{gs} * PULSED		—	2.5nC	—
GATE-DRAIN CHARGE	Q _{gd} * PULSED		—	3.0nC	—

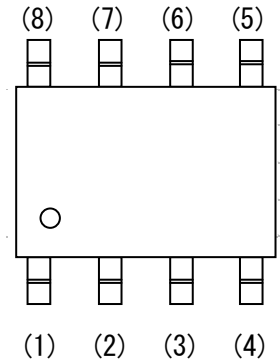
BODY DIODE (SOURCE-DRAIN)

PARAMETER	ITEM	CONDITION	MIN.	TYP.	MAX.
FORWARD VOLTAGE	V _{SD}	I _S =-1.6A/V _{GS} =0V	—	—	-1.2V

8. INNER CIRCUIT

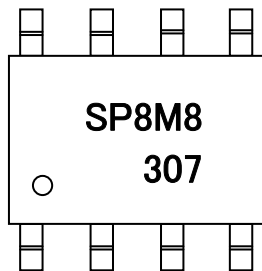


- (1) Tr1 SOURCE
- (2) Tr1 GATE
- (3) Tr2 SOURCE
- (4) Tr2 GATE
- (5) Tr2 DRAIN
- (6) Tr2 DRAIN
- (7) Tr1 DRAIN
- (8) Tr1 DRAIN



- ※1 ESD PROTECTION DIODE
- ※2 BODY DIODE

9. MARKING



“307” MEANS PRODUCTION YEAR AND WEEK.

“○” MEANS 1pin MARK.