

# 4V Drive Pch MOSFET

## RSE002P03

●Structure

Silicon P-channel MOSFET

●Features

- 1) Low On-resistance.
- 2) Small package (EMT3).
- 3) 4V drive.

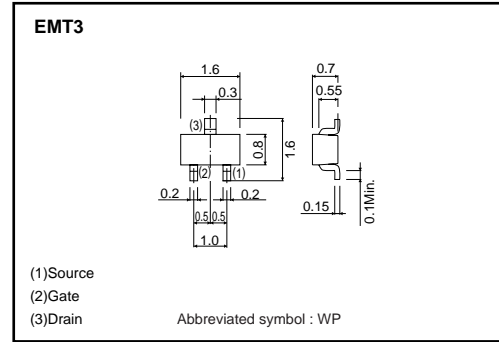
●Applications

Switching

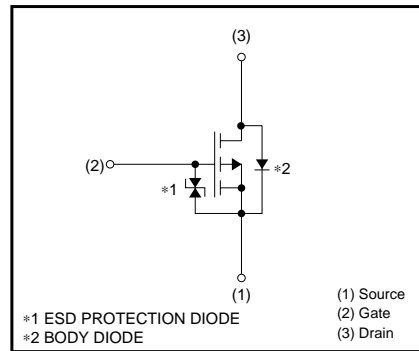
●Package specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
RSE002P03		○

●Dimensions (Unit : mm)



●Inner circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-source voltage	$V_{DSS}$	-30	V
Gate-source voltage	$V_{GSS}$	±20	V
Drain current	Continuous	$I_D$	±0.2 A
	Pulsed	$I_{DP}$ *1	±0.4 A
Total power dissipation	$P_D$ *2	0.15	W
Channel temperature	$T_{ch}$	150	°C
Range of storage temperature	$T_{stg}$	-55 to +150	°C

\*1  $P_w \leq 10\mu s$ , Duty cycle  $\leq 1\%$

\*2 Each terminal mounted on a recommended land

●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to ambient	$R_{th(ch-a)}$ *	833	°C/W

\* Each terminal mounted on a recommended land

## Transistors

## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	$I_{GSS}$	–	–	±10	μA	$V_{GS} = \pm 20V, V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR) DSS}$	–30	–	–	V	$I_D = -1mA, V_{GS} = 0V$
Zero gate voltage drain current	$I_{DSS}$	–	–	–1	μA	$V_{DS} = -30V, V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	–1.0	–	–2.5	V	$V_{DS} = -10V, I_D = -1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	–	0.9	1.4	Ω	$I_D = -0.2A, V_{GS} = -10V$
		–	1.4	2.1	Ω	$I_D = -0.15A, V_{GS} = -4.5V$
		–	1.6	2.4	Ω	$I_D = -0.15A, V_{GS} = -4.0V$
Forward transfer admittance	$ Y_{fs} $ *	0.2	–	–	S	$V_{DS} = -10V, I_D = -0.15A$
Input capacitance	$C_{iss}$	–	30	–	pF	$V_{DS} = -10V$
Output capacitance	$C_{oss}$	–	4	–	pF	$V_{GS} = 0V$
Reverse transfer capacitance	$C_{rss}$	–	5	–	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	–	8	–	ns	$V_{DD} \doteq -15V$
Rise time	$t_r$ *	–	5	–	ns	$I_D = -0.15A$
Turn-off delay time	$t_{d(off)}$ *	–	30	–	ns	$V_{GS} = -10V$
Fall time	$t_f$ *	–	40	–	ns	$R_L = 100\Omega$ $R_G = 10\Omega$

\*Pulsed

## ●Body diode characteristics (Source-drain) (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	$V_{SD}$	–	–	–1.2	V	$I_S = -0.1A, V_{GS} = 0V$

Transistors

●Electrical characteristics curves

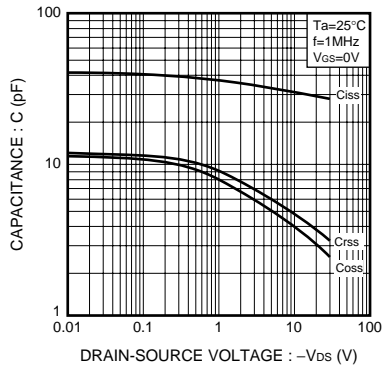


Fig.1 Typical Capacitance vs. Drain-Source Voltage

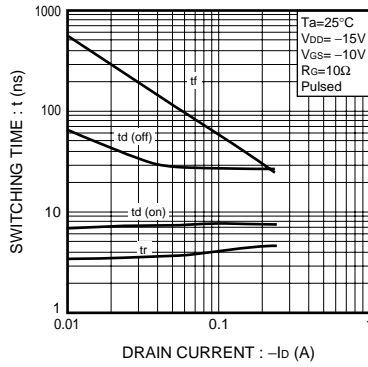


Fig.2 Switching Characteristics

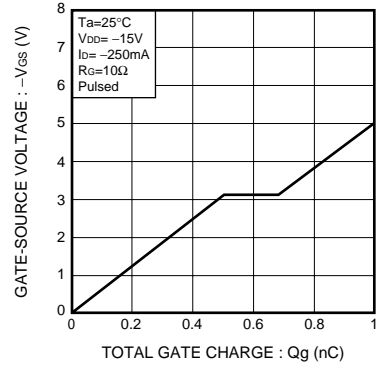


Fig.3 Dynamic Input Characteristics

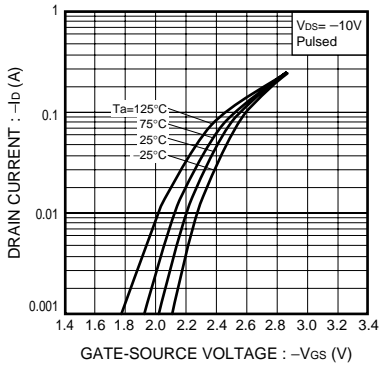


Fig.4 Typical Transfer Characteristics

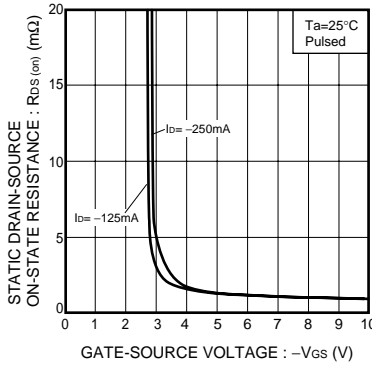


Fig.5 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

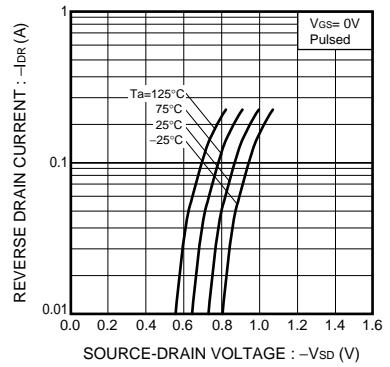


Fig.6 Reverse Drain Current vs. Source-Drain Voltage

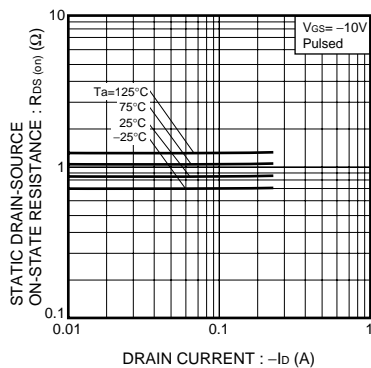


Fig.7 Static Drain-Source On-State Resistance vs. Drain current ( I )

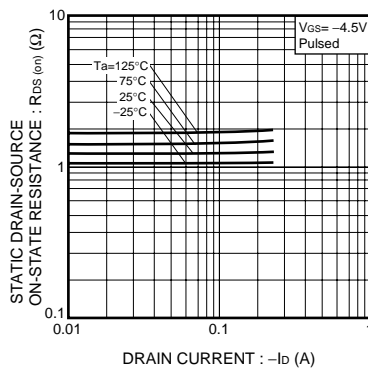


Fig.8 Static Drain-Source On-State Resistance vs. Drain current ( II )

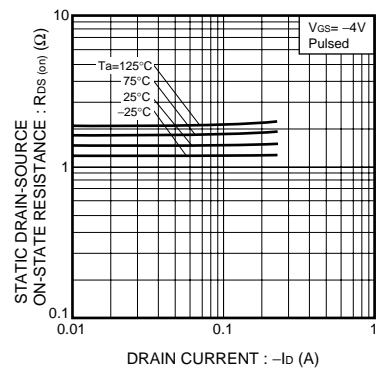


Fig.9 Static Drain-Source On-State Resistance vs. Drain current ( III )

Transistors

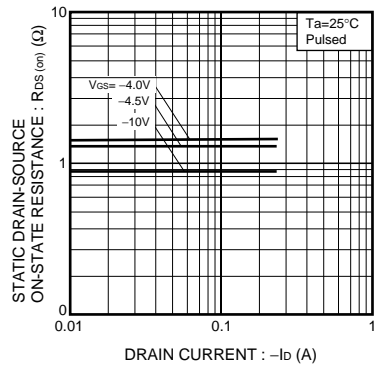


Fig.10 Static Drain-Source On-State Resistance vs. Drain current (  $I_V$  )

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