FC8V2204

Silicon N-channel MOS FET

For lithium-ion secondary battery protection circuits

■ Overview

N-channel dual type MOS FET in a compact surface mount type package.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 10.5 mΩ (V_{GS} = 4.5 V)
- Small size surface mounting package: WMini8-F1
- Drain common 2 elements
- Contributes to miniaturization of sets, mount area reduction
- Eco-friendly Halogen-free package

■ Packaging

FC8V22040L Embossed type (Thermo-compression sealing): 3000 pcs / reel (standard)

■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	24	V
Gate-source surrender voltage	V_{GSS}	±12	V
Drain current	I_D	8.0	A
Peak drain current	I_{DP}	48	A
Power dissipation	P_D1 *1	1.0	W
	P_D2 *1, *2	1.2	
	P_D3 *3	0.4	
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

Note) *1: Glass epoxy board: 25.4 mm × 25.4 mm × 0.8 mm
Copper foil of the drain portion should have a area of 300 mm² or more
Absolute maximum rating without heat sink for P_D is 400 mW
*2: t = 10 s
*3: Stand-alone (without the board)

■ Package

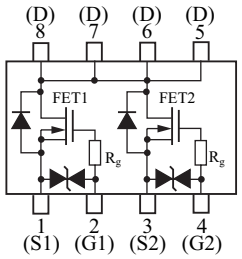
- Code
  WMini8-F1
  Package dimension clicks here.→ Click!

- Pin Name

1: Source-1	5: Drain
2: Gate-1	6: Drain
3: Source-2	7: Drain
4: Gate-2	8: Drain

■ Marking Symbol: 4C

■ Internal Connection

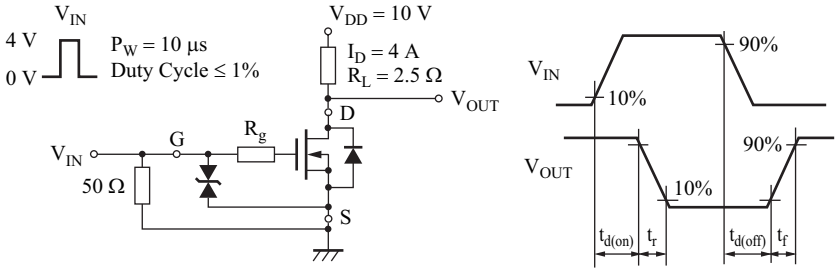


Resistance value	R_g	1	kΩ

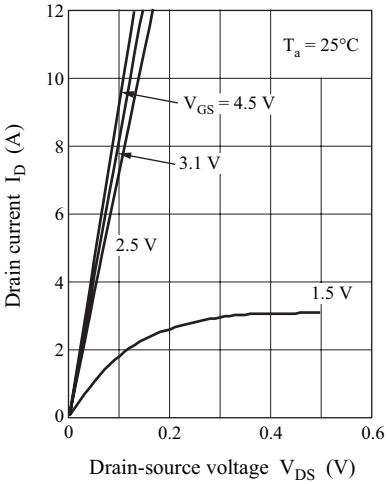
■ Electrical Characteristics T_a = 25°C±3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1.0 mA, V_{GS} = 0 V	24			V
Drain-source cutoff current	I_{DSS}	V_{DS} = 24 V, V_{GS} = 0 V			1.0	μA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±8.0 V, V_{DS} = 0 V			±10	μA
Gate threshold voltage	V_{TH}	I_D = 1.0 mA, V_{DS} = 10 V	0.40	0.85	1.50	V
Drain-source ON resistance	$R_{DS(on)}1$	I_D = 4.0 A, V_{GS} = 4.5 V	7.0	10.5	15	mΩ
	$R_{DS(on)}2$	I_D = 4.0 A, V_{GS} = 4.0 V	7.2	11.0	16	
	$R_{DS(on)}3$	I_D = 4.0 A, V_{GS} = 3.1 V	7.5	12.0	18	
	$R_{DS(on)}4$	I_D = 4.0 A, V_{GS} = 2.5 V	8.0	13.5	20	
Turn-on delay time *	$t_{d(on)}$	V_{DD} = 10 V, V_{GS} = 0 V to 4 V, I_D = 4.0 A		0.6		μs
Rise time *	t_r			1.5		μs
Turn-off delay time *	$t_{d(off)}$	V_{DD} = 10 V, V_{GS} = 4 V to 0 V, I_D = 4.0 A		4.4		μs
Fall time *	t_f			2.8		μs
Body diode characteristics						
Drain-source voltage	V_{SD}	I_S = 4.0 A, V_{GS} = 0 V		0.8	1.2	V

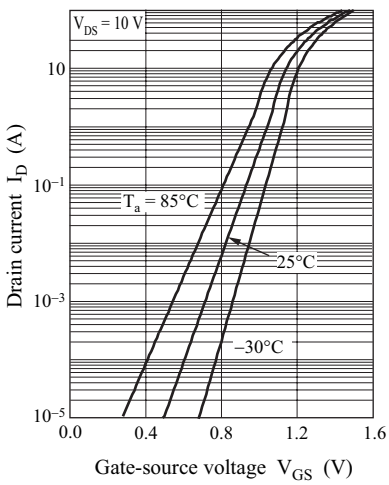
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Measurement circuit



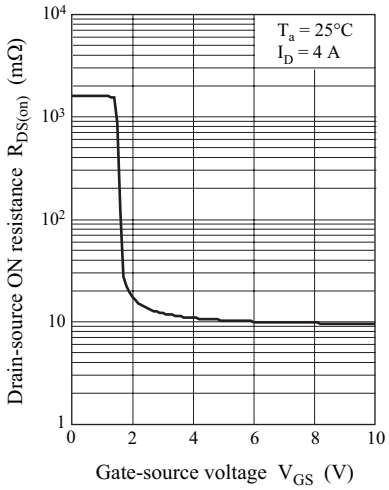
I_D — V_{DS}



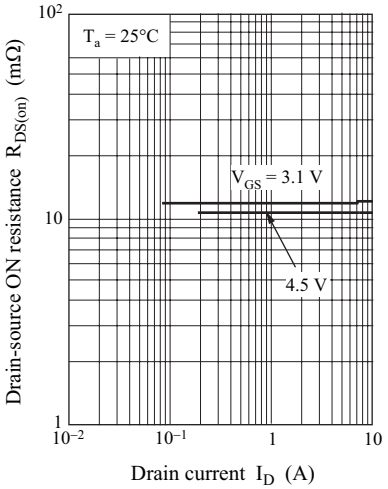
I_D — V_{GS}



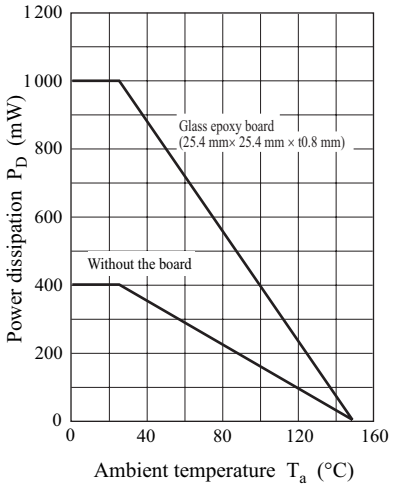
$R_{DS(on)}$ — V_{GS}



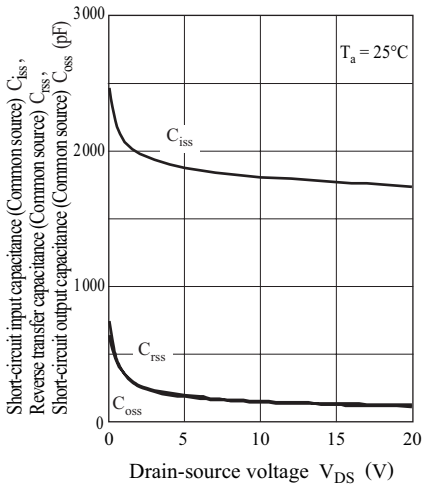
$R_{DS(on)}$ — I_D



P_D — T_a



C_{iss} , C_{rss} , C_{oss} — V_{DS}



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