

FK8V0303

Silicon N-channel MOS FET

For DC-DC Converter circuits

■ Overview

FK8V0303 is N-channel single type small signal MOS FET adopted small size surface mounting package.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 8 m Ω (V_{GS} = 4.5 V)
- High-speed switching : Q_g = 10.2 nC
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

■ Packaging

FK8V03030L Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	33	V
Gate-source surrender voltage	V_{GSS}	± 20	V
Drain current *1	I_D	12	A
		$t = 10 \text{ s}$	
Peak drain current *1,2	I_{DP}	48	A
Source current (Body diode)	I_S (BD)	12	A
Power dissipation *1	P_D	1	W
		$t = 10 \text{ s}$	
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *1: Mounted on a glass epoxy PC board: 25.4 mm \times 25.4 mm \times 0.8 mm

*2: Pulse test: Ensure that the channel temperature does not exceed 150 $^\circ\text{C}$

■ Package

• Code

WMini8-F1

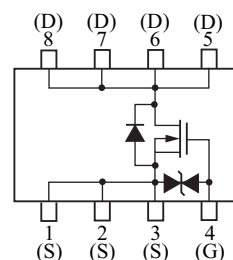
Package dimension clicks here. \rightarrow

• Pin Name

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

■ Marking Symbol: 3C

■ Internal Connection



■ Electrical Characteristics $T_a = 25^{\circ}\text{C} \pm 3^{\circ}\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = 1 \text{ mA}, V_{GS} = 0$	33			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = 33 \text{ V}, V_{GS} = 0$			10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$			± 10	μA
Gate-source threshold voltage	$V_{GS(th)}$	$I_D = 1.73 \text{ mA}, V_{DS} = 10 \text{ V}$	1		2.5	V
Drain-source ON resistance	$R_{DS(on)}$	$I_D = 6 \text{ A}, V_{GS} = 10 \text{ V}$		5	7	m Ω
		$I_D = 6 \text{ A}, V_{GS} = 4.5 \text{ V}$		8	13	
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		1100		pF
Short-circuit output capacitance (Common source)	C_{oss}			250		pF
Reverse transfer capacitance (Common source)	C_{rss}			150		pF
Turn-on delay time *2	$t_{d(on)}$	$V_{DD} = 15 \text{ V}, V_{GS} = 0 \text{ V to } 10 \text{ V}, I_D = 6 \text{ A}$		12		ns
Rise time *2	t_r			7		ns
Turn-off delay time *2	$t_{d(off)}$	$V_{DD} = 15 \text{ V}, V_{GS} = 10 \text{ V to } 0 \text{ V}, I_D = 6 \text{ A}$		61		ns
Fall time *2	t_f			38		ns
Gate charge load	Q_g	$V_{DD} = 15 \text{ V}, V_{GS} = 0 \text{ V to } 4.5 \text{ V}, I_D = 12 \text{ A}$		10.2		nC
Gate-source charge	Q_{gs}			3.1		nC
Gate-drain charge	Q_{gd}			4.7		nC

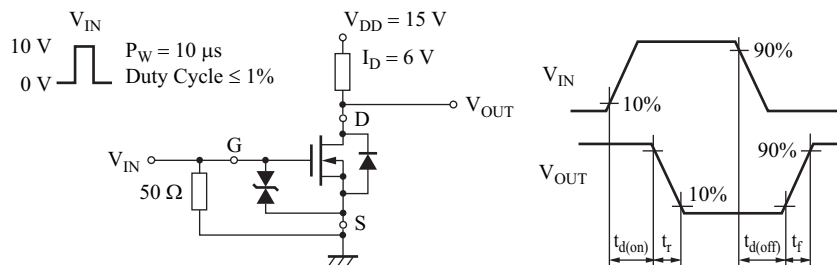
Body diode characteristics

Drain-source voltage *1	V_{SD}	$I_S = 6 \text{ A}, V_{GS} = 0$		0.8	1.2	V
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Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse test: Ensure that the channel temperature does not exceed 150°C

*2: Measurement circuit



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