UP0497A

Silicon N-channel MOSFET (FET1)
Silicon P-channel MOSFET (FET2)

For switching circuits

■ Features

- Two elements incorporated into one package (MOSFET)
- Incorporating a built-in gate protection-diode
- Downsizing of the equipment and costs can be reduced through reduction of the number of parts

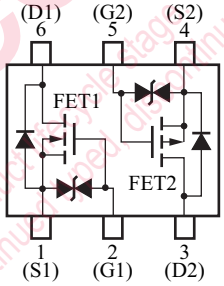
■ Basic Part Number

- 2SJ0674 + 2SK3938

■ Package

- Code
  SSMini6-F1
- Marking Symbol: 4E
- Pin Name
  1. Source (FET1)
  2. Gate (FET1)
  3. Drain (FET2)
  4. Source (FET2)
  5. Gate (FET2)
  6. Drain (FET1)

■ Internal Connection



■ Absolute Maximum Ratings $T_a = 25°C$

Parameter		Symbol	Rating	Unit
FET1	Drain-source surrender voltage	V_{DSS}	30	V
	Gate-source surrender voltage	V_{GSS}	±12	V
	Drain current	I_D	100	mA
	Peak drain current	I_{DP}	200	mA
FET2	Drain-source surrender voltage	V_{DSS}	–30	V
	Gate-source surrender voltage	V_{GSS}	±12	V
	Drain current	I_D	–100	mA
	Peak drain current	I_{DP}	–200	mA
Overall	Total power dissipation	P_T	125	mW
	Channel temperature	T_{ch}	125	°C
	Storage temperature	T_{stg}	– 55 to +125	°C

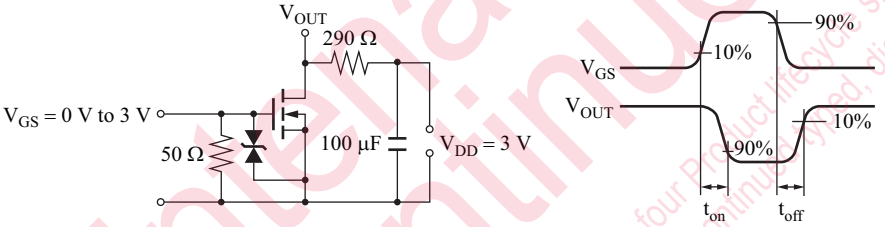
■ Electrical Characteristics T_a = 25°C±3°C

• FET1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 10 µA, V_{GS} = 0	30			V
Drain-source cutoff current	I_{DSS}	V_{DS} = 20 V, V_{GS} = 0			1.0	µA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±10 V, V_{DS} = 0			±10	µA
Gate threshold voltage	V_{TH}	I_D = 1.0 µA, V_{DS} = 3.0 V	0.5	1.0	1.5	V
Drain-source ON resistance	$R_{DS(on)}$	I_D = 10 mA, V_{GS} = 2.5 V		7	12	Ω
		I_D = 10 mA, V_{GS} = 4.0 V		5	8	
Forward transfer conductance	$\|Y_{fs}\|$	I_D = 10 mA, V_{DS} = 3.0 V, f = 1 kHz	20	55		mS
Short-circuit input capacitance (Common source)	C_{iss}	V_{DS} = 3 V, V_{GS} = 0, f = 1 MHz		12		pF
Short-circuit output capacitance (Common source)	C_{oss}			10		pF
Reverse transfer capacitance (Common source)	C_{rss}			6		pF
Turn-on time *	t_{on}	V_{DD} = 3 V, V_{GS} = 0 V to 3 V, I_D = 10 mA		350		ns
Turn-off time *	t_{off}	V_{DD} = 3 V, V_{GS} = 3 V to 0 V, I_D = 10 mA		350		ns

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: t_{on} , t_{off} measurement circuit

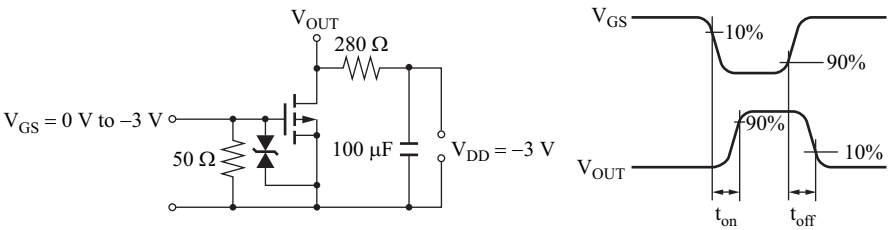


• FET2

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = –10 µA, V_{GS} = 0	–30			V
Drain-source cutoff current	I_{DSS}	V_{DS} = –20 V, V_{GS} = 0			–1.0	µA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±10 V, V_{DS} = 0			±10	µA
Gate threshold voltage	V_{TH}	I_D = –1.0 µA, V_{DS} = –3.0 V	– 0.5	–1.0	–1.5	V
Drain-source ON resistance	$R_{DS(on)}$	I_D = –10 mA, V_{GS} = –2.5 V		13	30	Ω
		I_D = –10 mA, V_{GS} = –4.0 V		9	18	
Forward transfer conductance	$\|Y_{fs}\|$	I_D = –10 mA, V_{DS} = –3.0 V, f = 1 kHz	20	40		mS
Short-circuit input capacitance (Common source)	C_{iss}	V_{DS} = –3 V, V_{GS} = 0, f = 1 MHz		12		pF
Short-circuit output capacitance (Common source)	C_{oss}			13		pF
Reverse transfer capacitance (Common source)	C_{rss}			7		pF
Turn-on time *	t_{on}	V_{DD} = –3 V, V_{GS} = 0 V to –3 V, I_D = –10 mA		300		ns
Turn-off time *	t_{off}	V_{DD} = –3 V, V_{GS} = –3 V to 0 V, I_D = –10 mA		400		ns

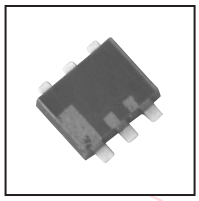
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

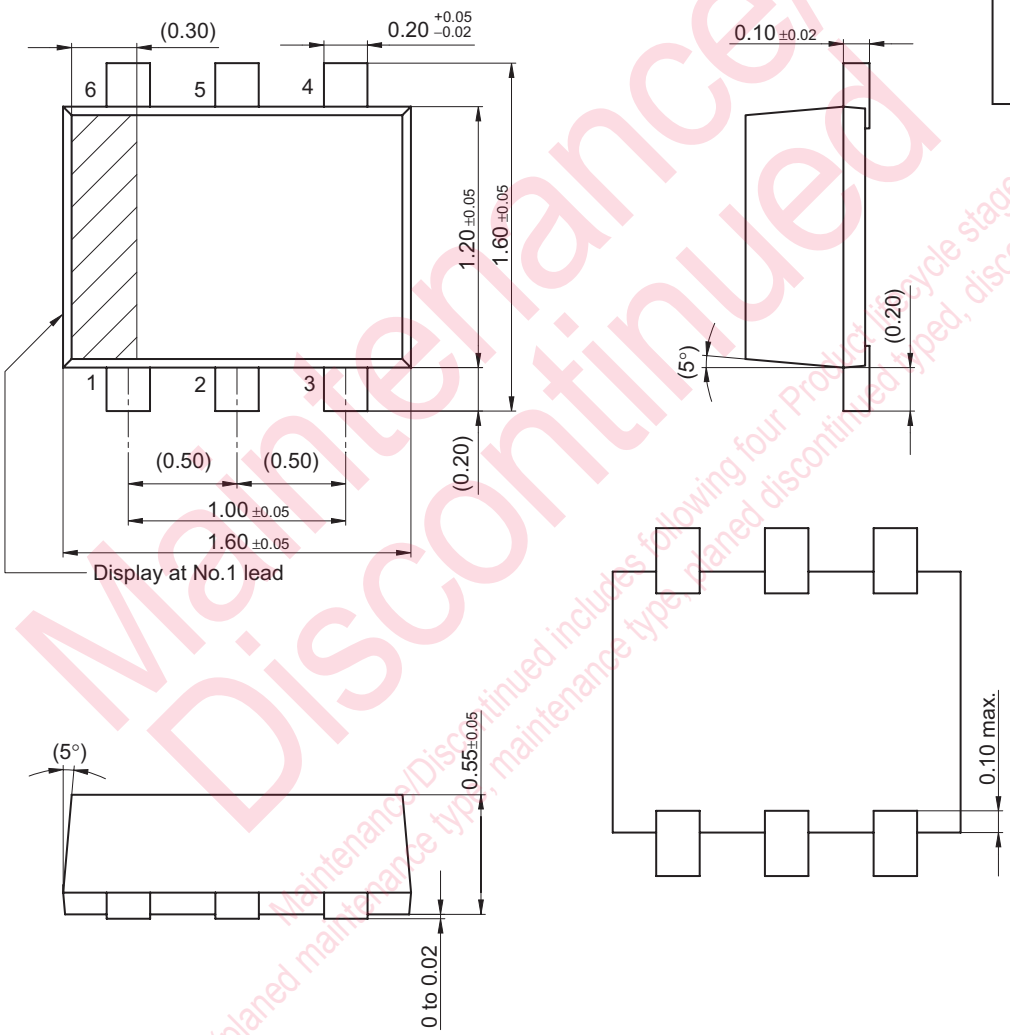
2. *: t_{on} , t_{off} measurement circuit



SSMini6-F1

Unit: mm





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