

# UP04979

Silicon N-channel MOSFET (Tr1)  
Silicon P-channel MOSFET (Tr2)

For switching

## ■ Features

- High-speed switching
- Gate protection diode built-in
- Two elements incorporated into one package  
(Each transistor is separated)
- Reduction of the mounting area and assembly cost by one half

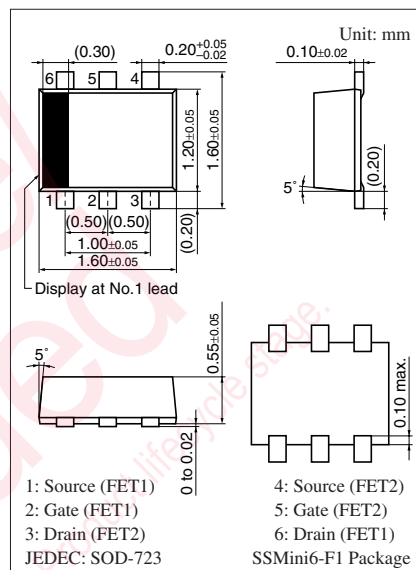
## ■ Basic Part Number

- 2SJ0672 + 2SK3539

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

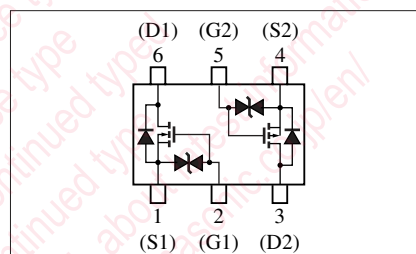
	Parameter	Symbol	Rating	Unit
Tr1	Drain-source surrender voltage	$V_{DSS}$	50	V
	Gate-source voltage (Drain open)	$V_{GSO}$	$\pm 7$	V
	Drain current	$I_D$	100	mA
	Peak drain current	$I_{DP}$	200	mA
Tr2	Drain-source surrender voltage	$V_{DSS}$	-30	V
	Gate-source voltage (Drain open)	$V_{GSO}$	$\pm 7$	V
	Drain current	$I_D$	-100	mA
	Peak drain current	$I_{DP}$	-200	mA
Overall	Total power dissipation *	$P_T$	125	mW
	Junction temperature	$T_{ch}$	125	$^\circ\text{C}$
	Storage temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$

Note) \*: Measuring on substrate at 17 mm × 10 mm × 1 mm



Marking Symbol: 4T

Internal Connection



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

• Tr1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	$V_{DSS}$	$I_D = 10 \mu\text{A}, V_{GS} = 0$	50			V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 30 \text{V}, V_{GS} = 0$			1.0	$\mu\text{A}$
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 7 \text{V}, V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Gate threshold voltage	$V_{th}$	$I_D = 1.0 \mu\text{A}, V_{DS} = 3.0 \text{V}$	0.5	1.0	1.5	V
Drain-source ON resistance	$R_{DS(on)}$	$I_D = 10 \text{mA}, V_{GS} = 2.5 \text{V}$		8	15	$\Omega$
		$I_D = 10 \text{mA}, V_{GS} = 4.0 \text{V}$		6	12	
Forward transfer admittance	$ Y_{fs} $	$I_D = 10 \text{mA}, V_{DS} = 3.0 \text{V}$	20	60		mS
Turn-on time *	$t_{on}$	$V_{DD} = 3 \text{V}, V_{GS} = 0 \text{V to } 3 \text{V}, I_D = 10 \text{mA}$		200		ns
Turn-off time *	$t_{off}$	$V_{DD} = 3 \text{V}, V_{GS} = 3 \text{V to } 0 \text{V}, I_D = 10 \text{mA}$		200		ns

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

2. \*: Refer to  $t_{on}, t_{off}$  test circuit.

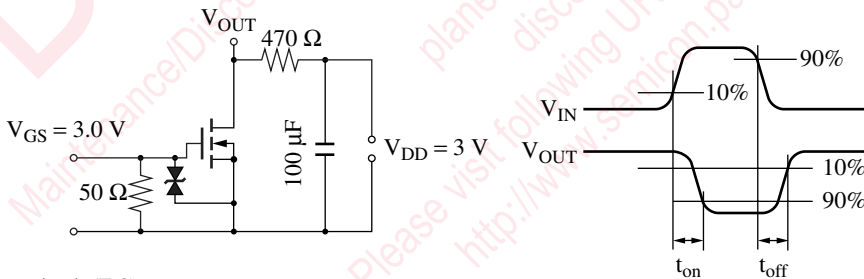
• Tr2

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	$V_{DSS}$	$I_D = -10 \mu\text{A}, V_{GS} = 0$	-30			V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = -20 \text{V}, V_{GS} = 0$			-1.0	$\mu\text{A}$
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 7 \text{V}, V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Gate threshold voltage	$V_{th}$	$I_D = -1.0 \mu\text{A}, V_{DS} = -3.0 \text{V}$	-0.5	-1.0	-1.5	V
Drain-source ON resistance	$R_{DS(on)}$	$I_D = -10 \text{mA}, V_{GS} = -2.5 \text{V}$		25	45	$\Omega$
		$I_D = -10 \text{mA}, V_{GS} = -4.0 \text{V}$		15	30	
Forward transfer admittance	$ Y_{fs} $	$I_D = -10 \text{mA}, V_{DS} = -3.0 \text{V}$	20	35		mS
Turn-on time *	$t_{on}$	$V_{DD} = -3 \text{V}, V_{GS} = 0 \text{V to } -3 \text{V}, I_D = -10 \text{mA}$		850		ns
Turn-off time *	$t_{off}$	$V_{DD} = -3 \text{V}, V_{GS} = -3 \text{V to } 0 \text{V}, I_D = -10 \text{mA}$		850		ns

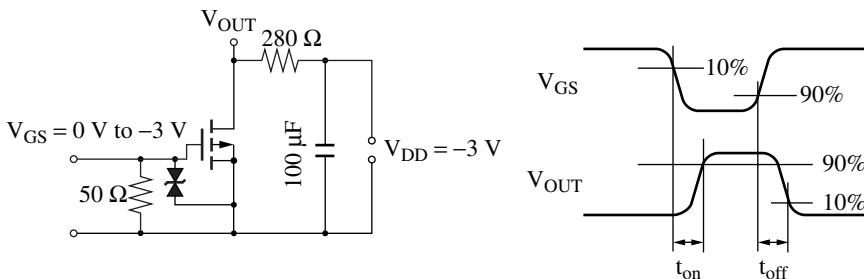
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2. \*: Refer to  $t_{on}, t_{off}$  test circuit.

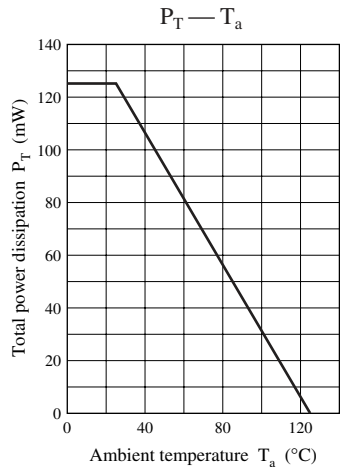
$t_{on}, t_{off}$  test circuit (Tr1)



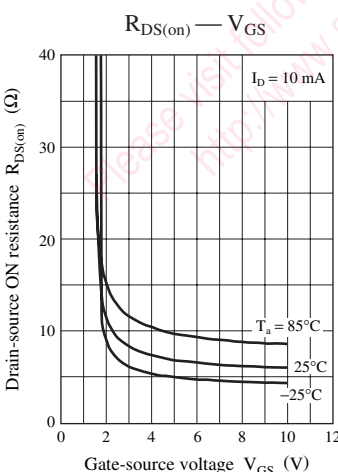
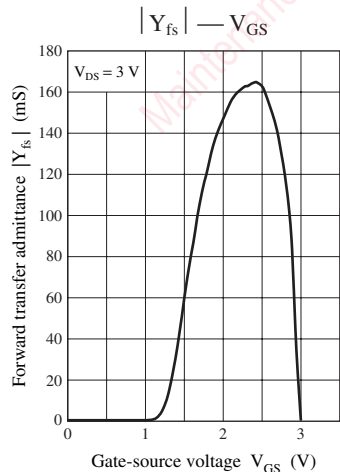
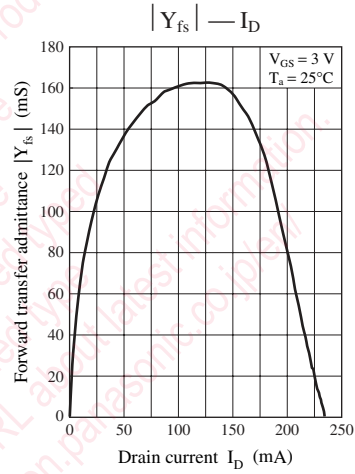
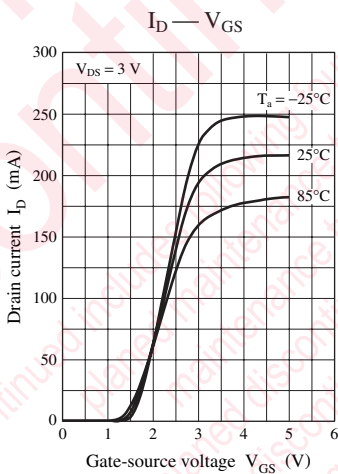
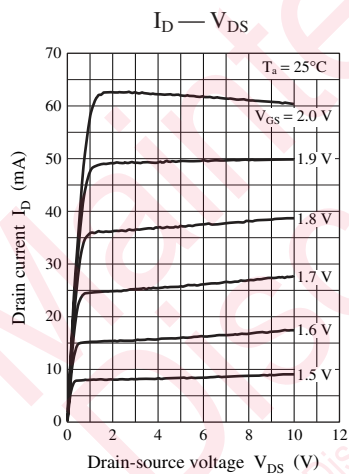
$t_{on}, t_{off}$  test circuit (Tr2)



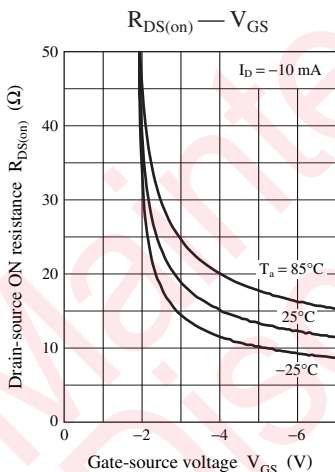
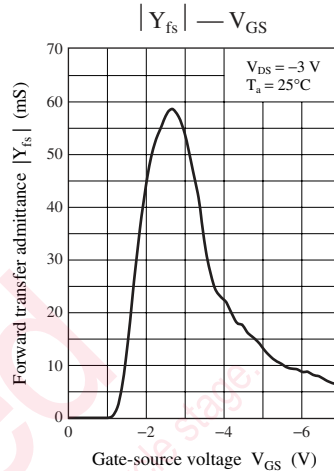
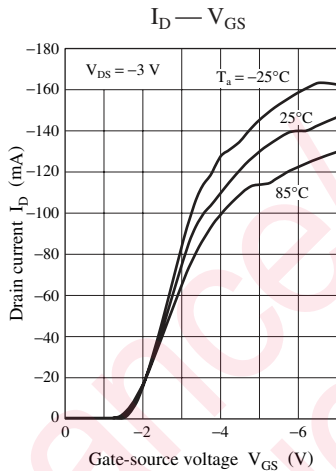
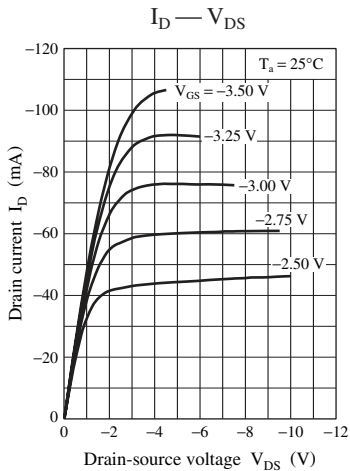
Common characteristics chart



Characteristics charts of Tr1



Characteristics charts of Tr2



Maintenance/Discontinued includes following four Product lifecycle stage  
 planned maintenance type  
 maintenance type  
 planned discontinued type  
 discontinued type  
 Please visit following URL about latest information.  
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