

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

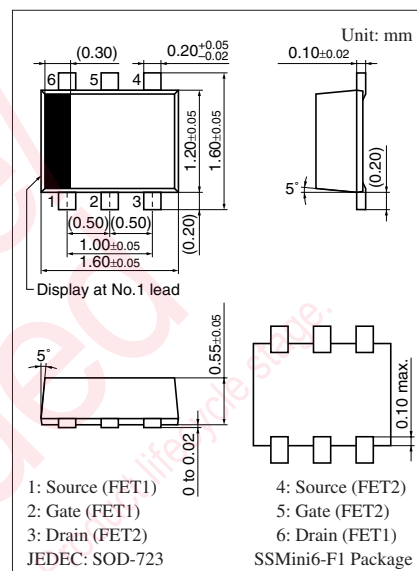
■ Basic Part Number

- 2SJ0672 + 2SK3539

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

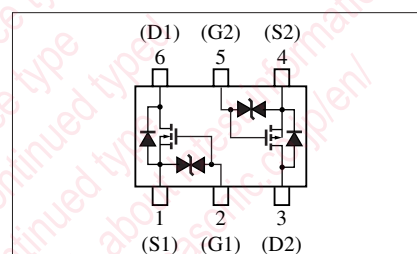
	Parameter	Symbol	Rating	Unit
Tr1	Drain-source surrender voltage	V_{DSS}	50	V
	Gate-source voltage (Drain open)	V_{GSO}	± 7	V
	Drain current	I_{D}	100	mA
	Peak drain current	I_{DP}	200	mA
Tr2	Drain-source surrender voltage	V_{DSS}	-30	V
	Gate-source voltage (Drain open)	V_{GSO}	± 7	V
	Drain current	I_{D}	-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 $17\text{ mm} \times 10\text{ mm} \times 1\text{ mm}$



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	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 7\ \text{V}$, $V_{DS} = 0$			± 10	μA
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	Ω
		$I_D = 10\ \text{mA}$, $V_{GS} = 4.0\ \text{V}$		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.

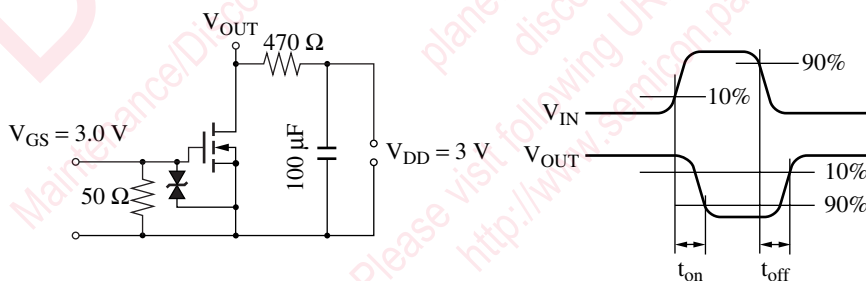
• Tr2

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	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 7\ \text{V}$, $V_{DS} = 0$			± 10	μA
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	Ω
		$I_D = -10\ \text{mA}$, $V_{GS} = -4.0\ \text{V}$		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

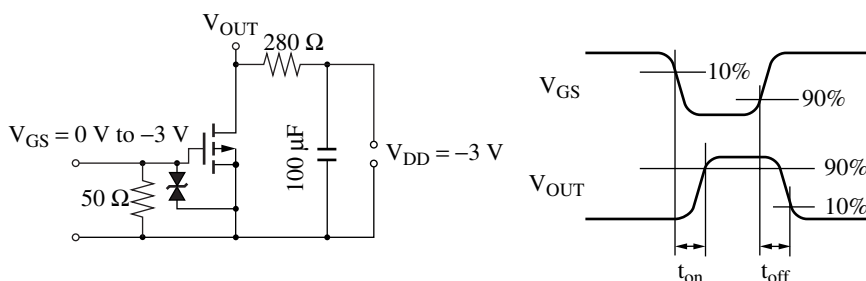
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2. *: Refer to t_{on} , t_{off} test circuit.

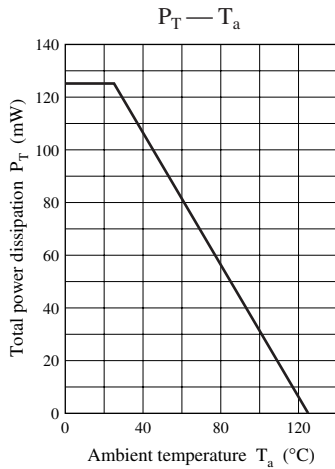
t_{on} , t_{off} test circuit (Tr1)



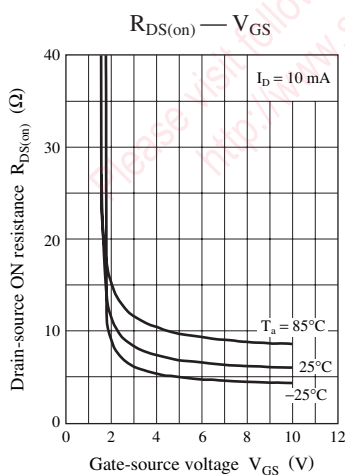
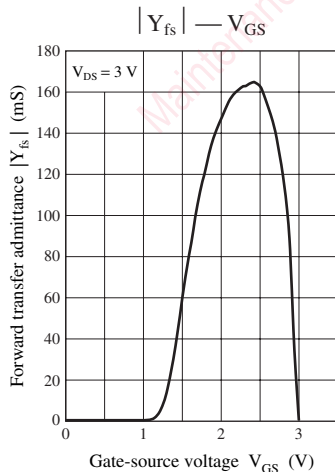
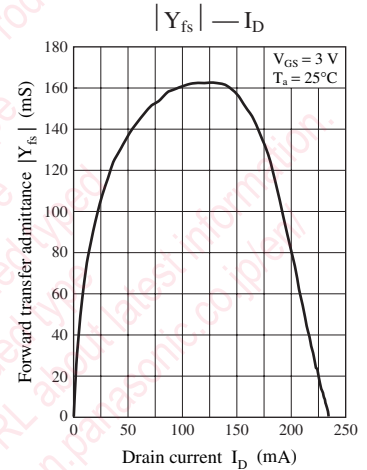
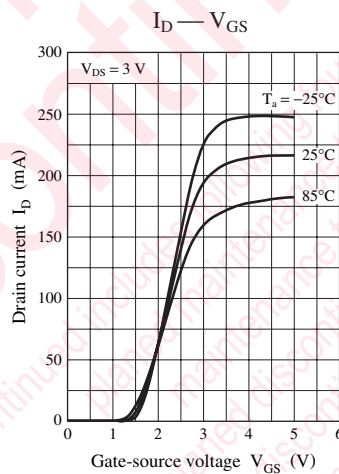
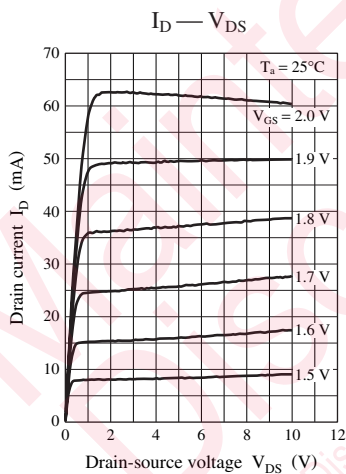
t_{on} , t_{off} test circuit (Tr2)



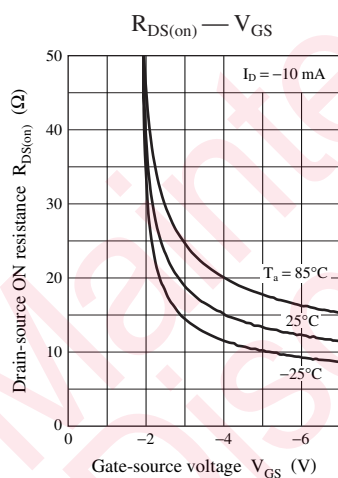
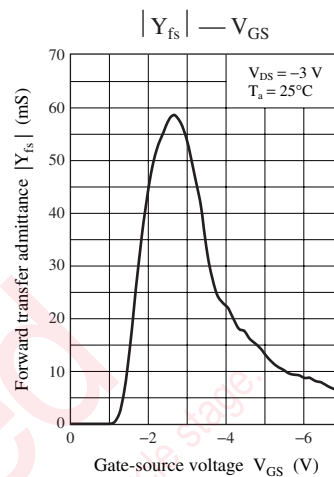
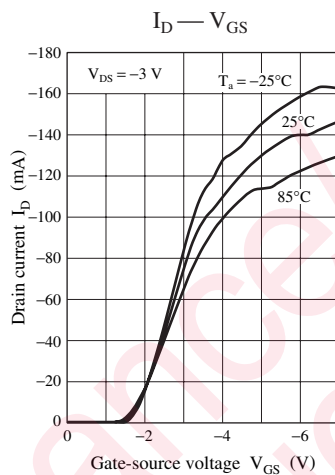
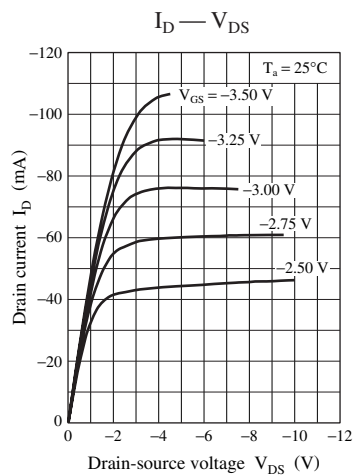
Common characteristics chart



Characteristics charts of Tr1



Characteristics charts of Tr2



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