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

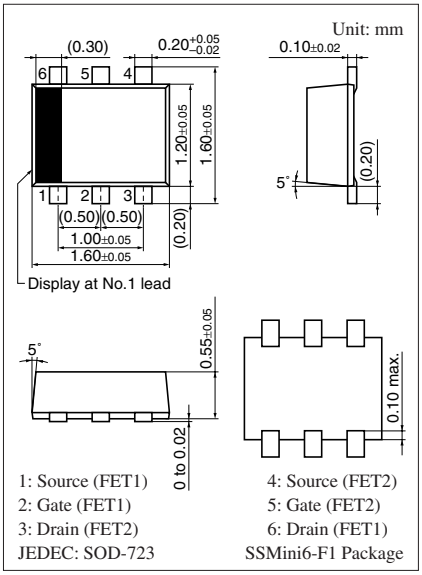
■ Basic Part Number

- 2SJ0672 + 2SK3539

■ Absolute Maximum Ratings $T_a = 25°C$

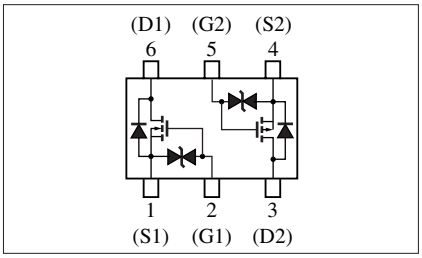
Parameter		Symbol	Rating	Unit
Tr1	Drain-source surrender voltage	V_{DSS}	50	V
	Gate-source voltage (Drain open)	V_{GSO}	±7	V
	Drain current	I_D	100	mA
	Peak drain current	I_{DP}	200	mA
Tr2	Drain-source surrender voltage	V_{DSS}	−30	V
	Gate-source voltage (Drain open)	V_{GSO}	±7	V
	Drain current	I_D	−100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

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



Marking Symbol: 4T

Internal Connection



■ Electrical Characteristics $T_a = 25°C \pm 3°C$

• Tr1

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

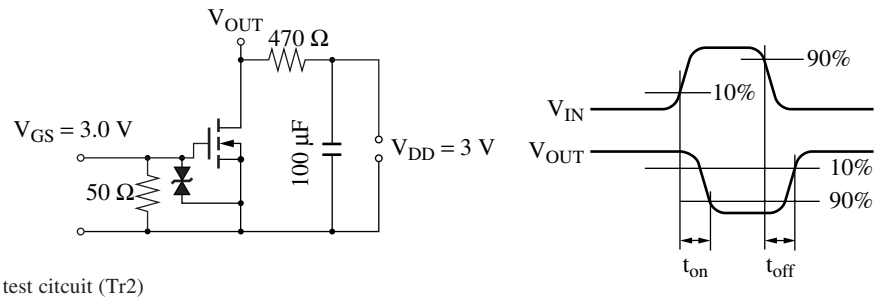
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Refer to t_{on}, t_{off} test circuit.

• Tr2

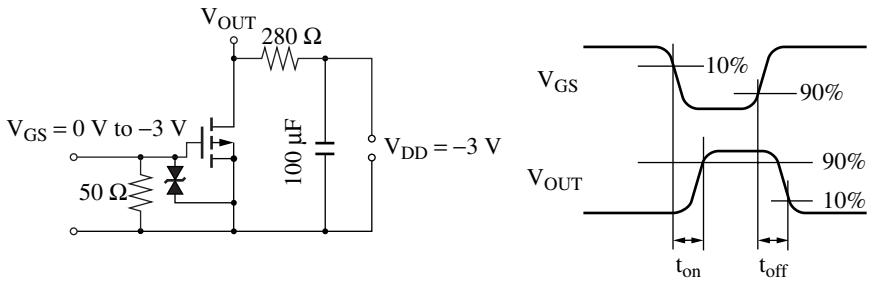
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = -10\ \mu A$, $V_{GS} = 0$	−30			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = -20$ V, $V_{GS} = 0$			−1.0	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 7$ V, $V_{DS} = 0$			±10	μA
Gate threshold voltage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

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

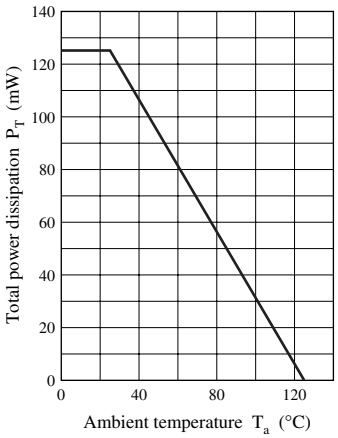


t_{on}, t_{off} test citcuit (Tr2)



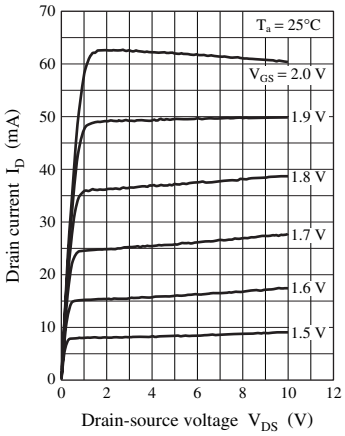
Common characteristics chart

P_T — T_a

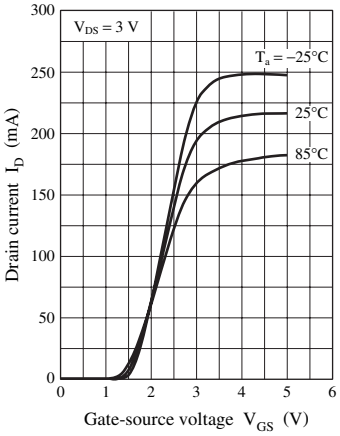


Characteristics charts of Tr1

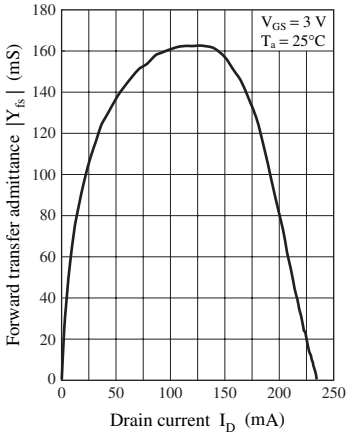
I_D — V_{DS}



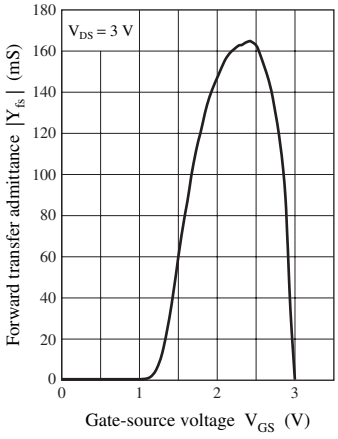
I_D — V_{GS}



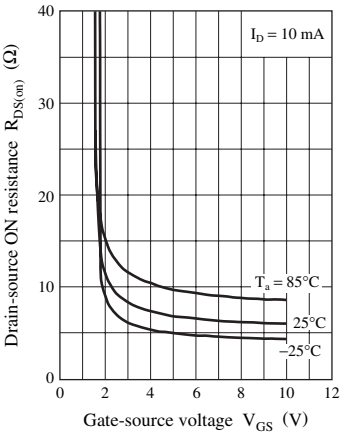
$|Y_{fs}|$ — I_D



$|Y_{fs}|$ — V_{GS}

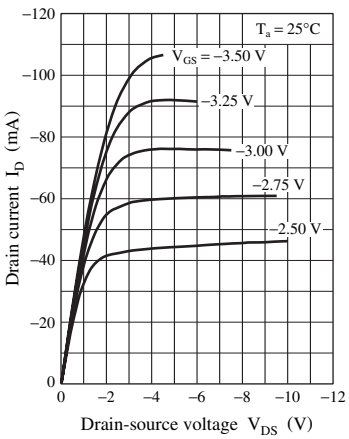


$R_{DS(on)}$ — V_{GS}

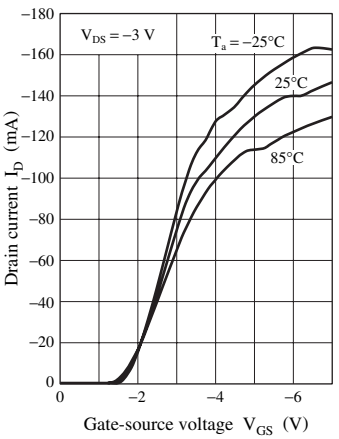


Characteristics charts of Tr2

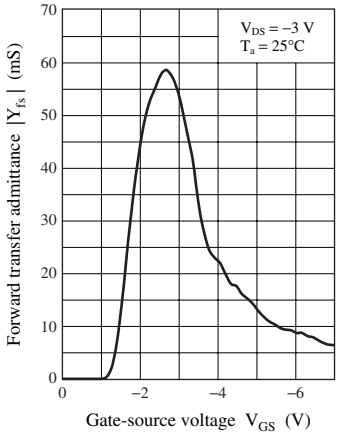
I_D — V_{DS}



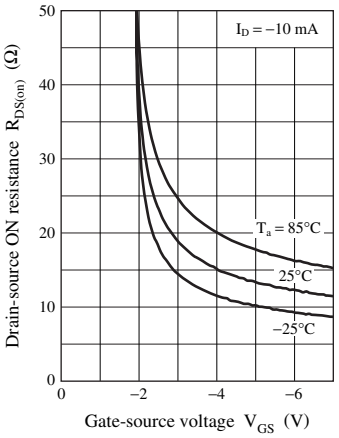
I_D — V_{GS}



$|Y_{fs}|$ — V_{GS}



$R_{DS(on)}$ — V_{GS}



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