

UP04878

Silicon N-channel MOSFET

For switching

■ Features

- Allowing 2.5 V drive
- Incorporating a built-in gate protection-diode
- Reduction of the mounting area and assembly cost by one half

■ Basic Part Number

- 2SK3539 × 2

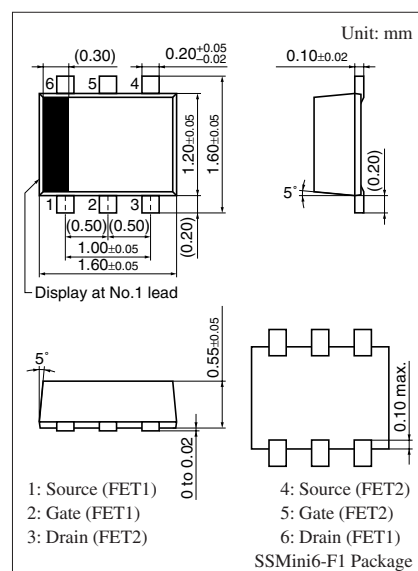
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
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
Total power dissipation	P_{T}	125	mW
Channel temperature	T_{ch}	125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to $+125$	$^\circ\text{C}$

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

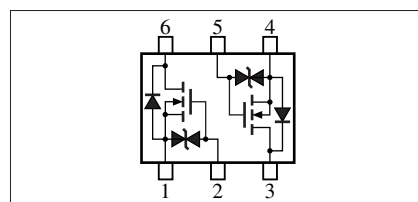
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_{\text{D}} = 10 \mu\text{A}$, $V_{\text{GS}} = 0$	50			V
Drain-source cutoff current	I_{DSS}	$V_{\text{DS}} = 50 \text{ V}$, $V_{\text{GS}} = 0$			1.0	μA
Gate-source cutoff current	I_{GSS}	$V_{\text{GS}} = \pm 7 \text{ V}$, $V_{\text{DS}} = 0$			± 5	μA
Gate threshold voltage	V_{th}	$I_{\text{D}} = 1 \mu\text{A}$, $V_{\text{DS}} = 3 \text{ V}$	0.9	1.2	1.5	V
Drain-source ON resistance	$R_{\text{DS(on)}}$	$I_{\text{D}} = 10 \text{ mA}$, $V_{\text{GS}} = 2.5 \text{ V}$		8	15	Ω
		$I_{\text{D}} = 10 \text{ mA}$, $V_{\text{GS}} = 4.0 \text{ V}$		6	12	
Forward transfer admittance	$ Y_{\text{fs}} $	$I_{\text{D}} = 10 \text{ mA}$, $V_{\text{GS}} = 4.0 \text{ V}$	20	60		mS
Short-circuit forward transfer capacitance (Common-source)	C_{iss}	$V_{\text{DS}} = 3 \text{ V}$, $V_{\text{GS}} = 0 \text{ V}$, $f = 1 \text{ MHz}$		12		pF
Short-circuit output capacitance (Common-source)	C_{oss}			7		pF
Reverse transfer capacitance (Common-source)	C_{rss}			3		pF
Turn-on time	t_{on}	$V_{\text{DD}} = 3 \text{ V}$, $V_{\text{GS}} = 0 \text{ V}$ to 3 V , $R_{\text{L}} = 470 \Omega$		200		ns
Turn-off time	t_{off}	$V_{\text{DD}} = 3 \text{ V}$, $V_{\text{GS}} = 3 \text{ V}$ to 0 V , $R_{\text{L}} = 470 \Omega$		200		ns

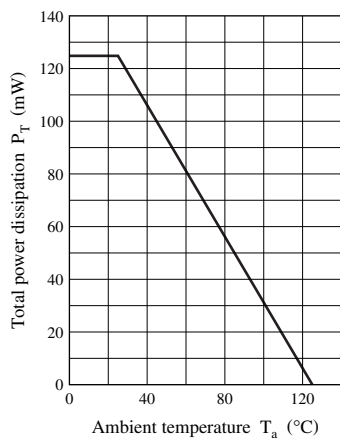
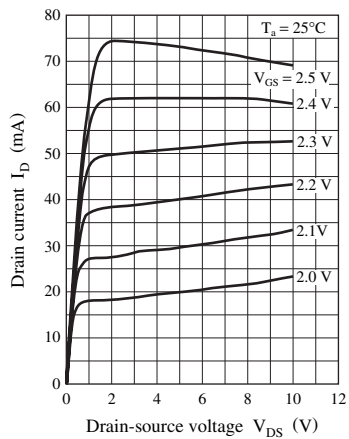
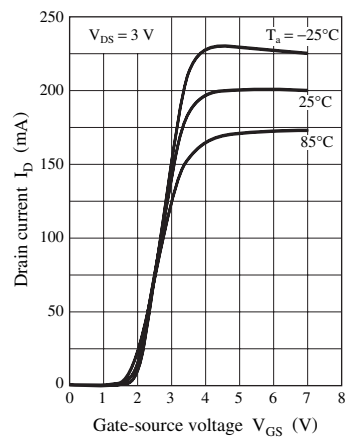
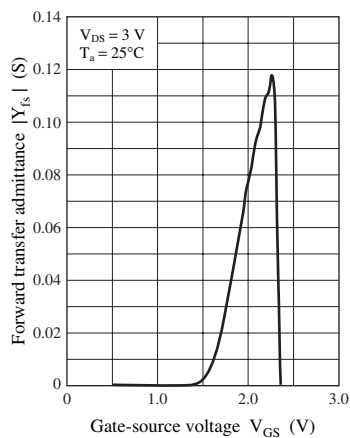
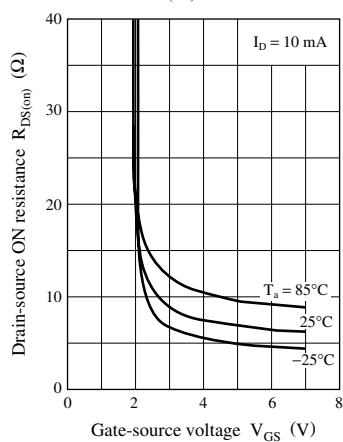
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.



Marking Symbol: 7Y

Internal Connection



$P_T - T_a$  $I_D - V_{DS}$  $I_D - V_{GS}$  $|Y_{fs}| - V_{GS}$  $R_{DS(on)} - V_{GS}$ 

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