

## 2SK656

## Silicon N-Channel MOS FET

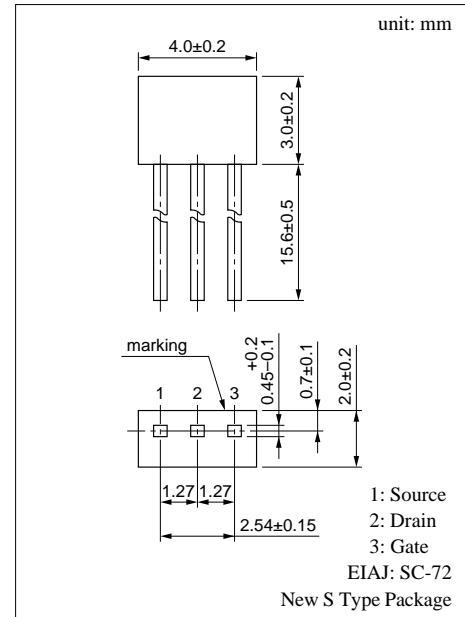
For switching

## ■ Features

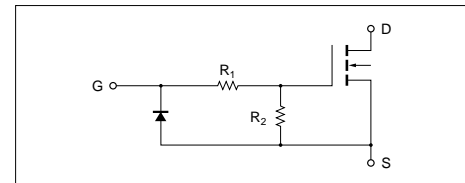
- High-speed switching
- Small drive current owing to high input impedance
- High electrostatic breakdown voltage

## ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rated	Unit
Drain to Source breakdown voltage	V <sub>DSS</sub>	50	V
Gate to Source voltage	V <sub>GSO</sub>	8	V
Drain current	I <sub>D</sub>	100	mA
Max drain current	I <sub>DP</sub>	200	mA
Allowable power dissipation	P <sub>D</sub>	200	mW
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C



## Internal Connection



## ■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I <sub>DSS</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0			10	μA
Gate to Source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = 8V, V <sub>DS</sub> = 0	40		80	μA
Drain to Source breakdown voltage	V <sub>DSS</sub>	I <sub>D</sub> = 100μA, V <sub>GS</sub> = 0	50			V
Gate threshold voltage	V <sub>th</sub>	I <sub>D</sub> = 100μA, V <sub>DS</sub> = V <sub>GS</sub>	1.5		3.5	V
Drain to Source ON-resistance	R <sub>DS(on)</sub>	I <sub>D</sub> = 20mA, V <sub>GS</sub> = 5V			50	Ω
Forward transfer admittance	Y <sub>fs</sub>	I <sub>D</sub> = 20mA, V <sub>DS</sub> = 5V, f = 1kHz	20	35		mS
High level output voltage	V <sub>OH</sub>	V <sub>DD</sub> = 5V, V <sub>GS</sub> = 1V, R <sub>L</sub> = 200Ω	4.5			V
Low level output voltage	V <sub>OL</sub>	V <sub>DD</sub> = 5V, V <sub>GS</sub> = 5V, R <sub>L</sub> = 200Ω			1	V
Input resistance	R <sub>1</sub> + R <sub>2</sub> <sup>*1</sup>		100		200	kΩ
Input capacitance (Common Source)	C <sub>iss</sub>			9		pF
Output capacitance (Common Source)	C <sub>oss</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0, f = 1MHz		4.5		pF
Reverse transfer capacitance (Common Source)	C <sub>rss</sub>			1.1		pF
Turn-on time	t <sub>on</sub> <sup>*2</sup>	V <sub>DD</sub> = 5V, V <sub>GS</sub> = 0 to 5V, R <sub>L</sub> = 200Ω			1	μs
Turn-off time	t <sub>off</sub> <sup>*2</sup>	V <sub>DD</sub> = 5V, V <sub>GS</sub> = 5 to 0V, R <sub>L</sub> = 200Ω			1	μs

\*1 Resistance ratio R<sub>1</sub>/R<sub>2</sub> = 1/50

\*2 Pulse measurement

