

2SK2276

Silicon N-Channel MOS

For switching

■ Features

- Low ON-resistance $R_{DS(on)}$
- High-speed switching

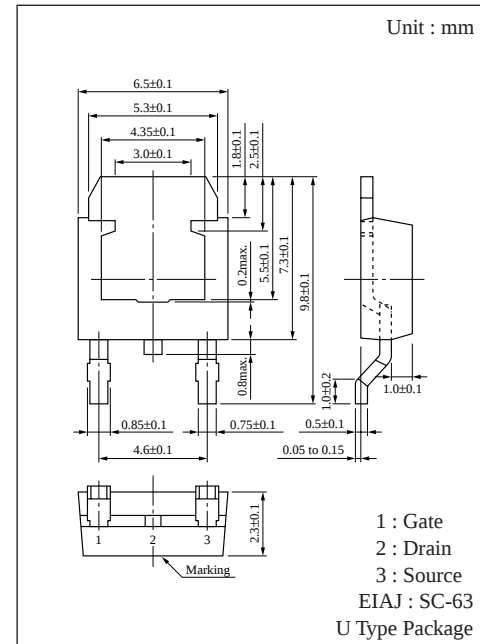
■ Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source breakdown voltage	V_{DSS}	60	V
Gate-Source voltage	V_{GSS}	± 20	V
Drain current	I_D	± 3	A
Max drain current	I_{DP}^{*1}	± 5	A
Allowable power dissipation Channel temperature	P_D^{*2}	10	W
	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to $+150$	$^\circ\text{C}$

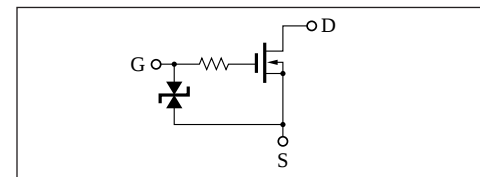
* 1 $t \leq 300\mu\text{s}$, Duty Cycle $< 10\%$ * 2 $T_c = 25^\circ\text{C}$

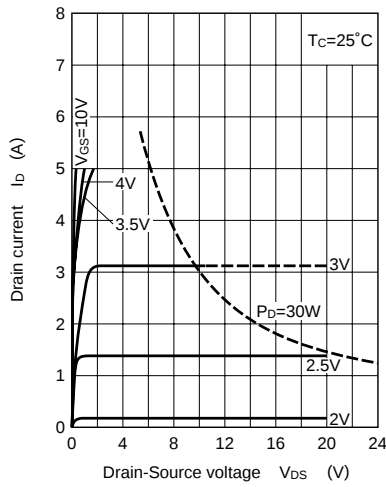
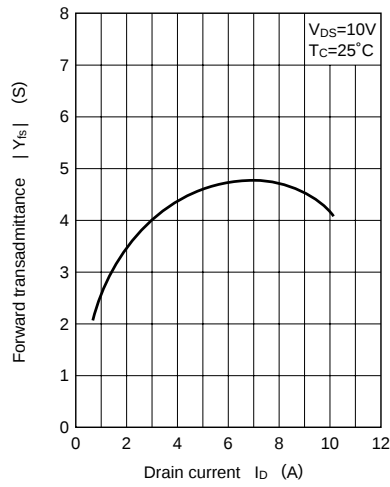
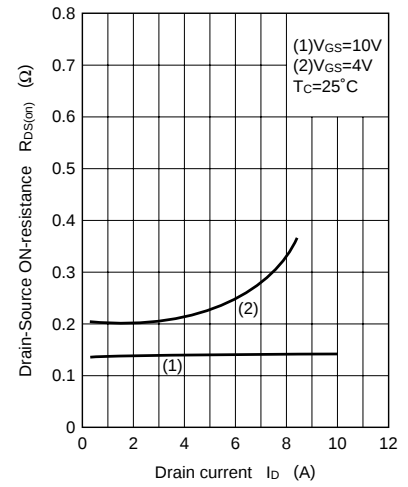
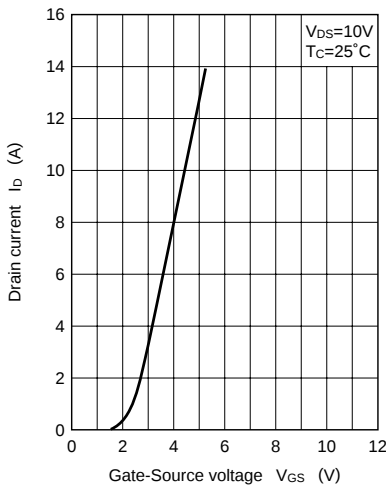
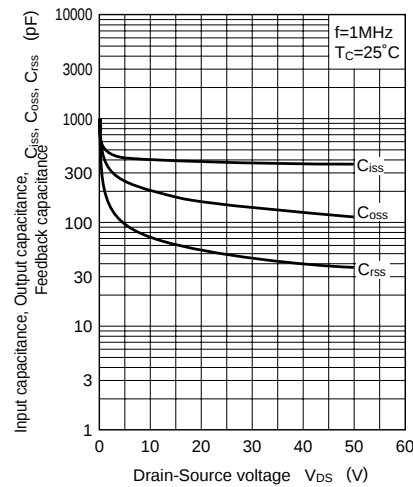
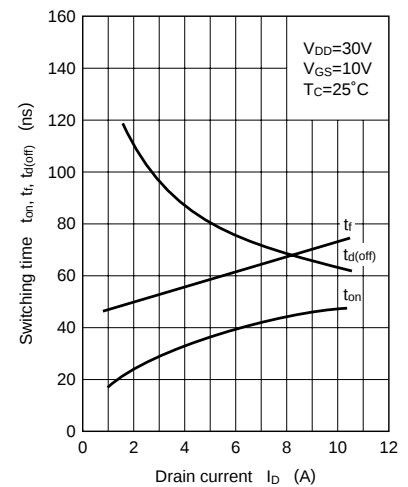
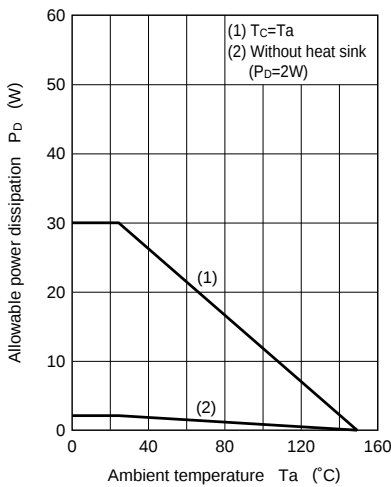
■ Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I_{DSS}	$V_{DS} = 40\text{V}$, $V_{GS} = 0$			10	μA
Gate-Source leakage current	I_{GSS}	$V_{GS} = \pm 20\text{V}$, $V_{DS} = 0$			± 1	μA
Drain-Source breakdown voltage	V_{DSS}	$I_D = 1\text{mA}$, $V_{GS} = 0$	60			V
Gate threshold voltage	V_{th}	$V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$	1		2.5	V
Drain-Source ON-resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}$, $I_D = 3\text{A}$		0.135	0.2	Ω
Forward transadmittance	$ Y_{fs} $	$V_{DS} = 10\text{V}$, $I_D = 3\text{A}$	2.4	4		S
Input capacitance	C_{iss}	$V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$		400		pF
Output capacitance	C_{oss}			210		pF
Feedback capacitance	C_{rss}			80		pF
Turn-on time	t_{on}	$V_{GS} = 10\text{V}$, $I_D = 3\text{A}$, $R_L = 10\Omega$		29		ns
Fall time	t_f			53		ns
Turn-off time (delay time)	$t_{d(off)}$			97		ns

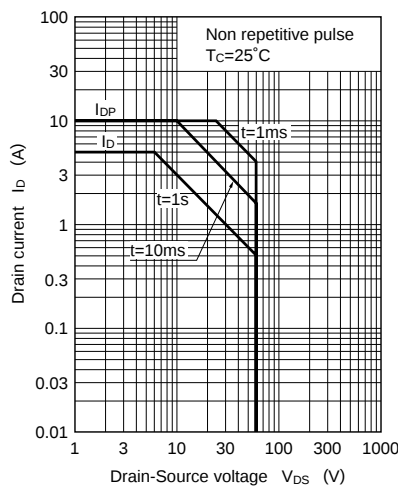


■ Internal Connection



$I_D - V_{DS}$  $|Y_{fs}| - I_D$  $R_{DS(on)} - I_D$  $I_D - V_{GS}$  $C_{iss}, C_{oss}, C_{rss} - V_{DS}$  $t_{on}, t_f, t_d(off) - I_D$  $P_D - T_a$ 

Area of safe operation (ASO)

 $R_{DS(on)} - I_D$ 