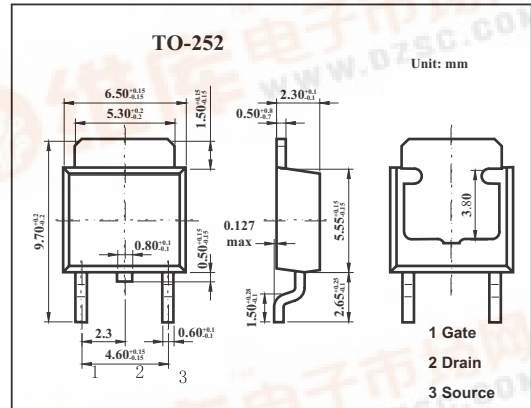


SMD Type MOSFET

MOS Field Effect Transistor
2SK3641

Features

- Low on-state resistance
 $R_{DS(on)1} = 14\text{ m}\Omega\text{ MAX. (}V_{GS} = 10\text{ V, }I_D = 18\text{ A)}$
 $R_{DS(on)2} = 25\text{ m}\Omega\text{ MAX. (}V_{GS} = 4.5\text{ V, }I_D = 15\text{ A)}$
- Low C_{iss} : $C_{iss} = 930\text{ pF TYP.}$



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

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DS}	30	V
Gate to source voltage	V_{GS}	± 20	V
Drain current	I_D	± 36	A
	I_{dp}^*	± 140	A
Power dissipation	P_D	$T_c=25^\circ\text{C}$	29
		$T_A=25^\circ\text{C}$	1.0
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\ \mu\text{s, Duty Cycle} \leq 1\%$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Drain cut-off current	I_{DSS}	$V_{DS}=30\text{V, }V_{GS}=0$			10	$\mu\text{ A}$	
Gate leakage current	I_{GSS}	$V_{GS} = \pm 20\text{V, }V_{DS}=0$			± 10	$\mu\text{ A}$	
Gate cut off voltage	$V_{GS(off)}$	$V_{DS}=10\text{V, }I_D=1\text{mA}$	1.5		2.5	V	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V, }I_D=18\text{A}$	5.5	11		S	
Drain to source on-state resistance	$R_{DS(on)1}$	$V_{GS}=10\text{V, }I_D=18\text{A}$		11	14	$\text{m}\Omega$	
	$R_{DS(on)2}$	$V_{GS}=4.5\text{V, }I_D=15\text{A}$		17	25	$\text{m}\Omega$	
Input capacitance	C_{iss}	$V_{DS}=10\text{V, }V_{GS}=0, f=1\text{MHZ}$		930		pF	
Output capacitance	C_{oss}			250		pF	
Reverse transfer capacitance	C_{rss}			160		pF	
Turn-on delay time	t_{on}				9.4		ns
Rise time	t_r				8.6		ns
Turn-off delay time	t_{off}	$I_D=18\text{A, }V_{GS(on)}=15\text{V, }R_G=10\ \Omega, V_{DD}=10\text{V}$		34		ns	
Fall time	t_f				11		ns
Total Gate Charge	Q_G		$V_{DD} = 24\text{V}$		22		nC
Gate to Source Charge	Q_{GS}	$V_{GS} = 10\text{ V}$		3.6		nC	
Gate to Drain Charge	Q_{GD}	$I_D = 36\text{A}$		7.4		nC	
Body Diode Forward Voltage Note	$V_{F(S-D)}$	$I_F = 36\text{ A, }V_{GS} = 0\text{ V}$		1.0		V	
Reverse Recovery Time	t_{rr}	$I_F = 36\text{ A, }V_{GS} = 0\text{ V}$		24		ns	
Reverse Recovery Charge	Q_{rr}		$di/dt = 100\text{ A}/\mu\text{s}$		15		nC

