

General Description

The 2SK3065 uses advanced trench technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a Battery protection or in other Switching application.

Features

- $R_{DS(ON)} < 50m\Omega$ @ $V_{GS} = 10V$
- $R_{DS(ON)} < 58m\Omega$ @ $V_{GS} = 4.5V$
- Fast Switching
- RoHS Compliant

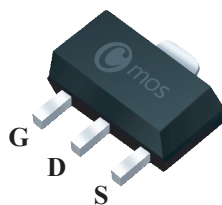
Product Summary

BVDSS	$R_{DS(ON)}$	ID
60V	50m Ω	6A

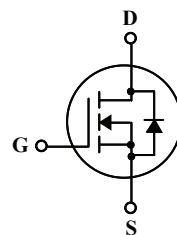
Applications

- DC/DC Converter
- Battery Switch

SOT-89 Pin Configuration



SOT-89
(2SK3065)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current	18	A
$P_D @ T_A = 25^\circ C$	Total Power Dissipation	1	W
T_{STG}	Storage Temperature Range	150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	125	$^\circ C/W$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=5A$	---	---	50	m Ω
		$V_{GS}=4.5V$, $I_D=4.5A$	---	---	58	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=48V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=3A$	---	7	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1.6	---	Ω
Q_g	Total Gate Charge	$V_{DS}=30V$, $V_{GS}=10V$, $I_D=2A$	---	10	---	nC
Q_{gs}	Gate-Source Charge		---	2	---	
Q_{gd}	Gate-Drain Charge		---	5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V$, $V_{GS}=4V$, $R_G=10\Omega$ $I_D=1A$	---	12	---	ns
T_r	Rise Time		---	35	---	
$T_{d(off)}$	Turn-Off Delay Time		---	90	---	
T_f	Fall Time		---	50	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1000	---	pF
C_{oss}	Output Capacitance		---	40	---	
C_{rss}	Reverse Transfer Capacitance		---	35	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=2A$	---	0.79	1.2	V

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Typical Characteristics

