

### General Description

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

### Features

- RDS(ON)<50mΩ @ VGS=10V
- RDS(ON)<58mΩ @ VGS=4.5V
- Fast Switching
- RoHS Compliant

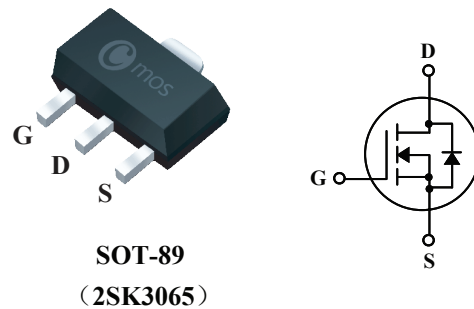
### Product Summary

BVDSS	RDSON	ID
60V	50mΩ	6A

### Applications

- DC/DC Converter
- Battery Switch

### SOT-89 Pin Configuration



### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	60	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Continuous Drain Current	6	A
I <sub>DM</sub>	Pulsed Drain Current	18	A
P <sub>D</sub> @T <sub>C</sub> =25°C	Total Power Dissipation	0.5	W
T <sub>STG</sub>	Storage Temperature Range	150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R <sub>θJA</sub>	Thermal Resistance Junction-ambient	---	62.5	°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 $\Omega$
		$V_{GS}=4.5V$ , $I_D=4.5A$	---	---	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	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V$ , $V_{DS}=0V$	---	---	$\pm 100$	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	---	$\Omega$
$Q_g$	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	$V_{DS}=10V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	1500	---	pF
$C_{oss}$	Output Capacitance		---	95	---	
$C_{riss}$	Reverse Transfer Capacitance		---	40	---	

**Diode Characteristics**

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

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