

## 2SK3679-01MR (900V/1.58Ω/9A)

1) Package TO-220F

## 2) Absolute Maximum Ratings (Tc=25 unless otherwise specified)

Items	Symbols	Ratings	Units
Drain-Source Voltage	$V_{DS}$	900	V
Continuous Drain Current	$I_D$	±9	A
Pulsed Drain Current	$I_{D(pulse)}$	±36	A
Gate-Source Voltage	$V_{GS}$	±30	V
Repetitive and Non-Repetitive Maximum Avalanche Current	$I_{AR}$	9	A
Non-Repetitive Maximum Avalanche Energy	$E_{AS}$	287.7	mJ *1
Maximum Drain-Source dV/dt	dV <sub>DS</sub> /dt	20	kV/us
Peak Diode recovery dV/dt	dV/dt	5	kV/us *2
Maximum Power Dissipation	$P_D @ T_c=25$	95	W
	$P_D @ T_a=25$	2.16	W
Operating and Storage	$T_{ch}$	150	
Temperature range	$T_{stg}$	-55 ~ +150	

## 3) Electrical Characteristics (Tch=25 unless otherwise specified)

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=250\mu A$ $V_{GS}=0V$	900	---	---	V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=250\mu A$ $V_{DS}=V_{GS}$	3.0	---	5.0	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=900V$ $T_{ch}=25$	---	---	25	$\mu A$
		$V_{GS}=0V$ $T_{ch}=125$	---	---	250	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V$ $V_{DS}=0V$	---	---	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D=4.5A$ $V_{GS}=10V$	---	---	1.58	
Input Capacitance	$C_{iss}$	$V_{DS}=25V$	---	1200	---	pF
Output Capacitance	$C_{oss}$	$V_{GS}=0V$	---	140	---	
Reverse Transfer Capacitance	$C_{rss}$	$f=1MHz$	---	7	---	nC
Total Gate Charge	$Q_g$	$V_{cc}=450V$	---	32	---	
Gate to Source Charge	$Q_{gs}$	$I_D=9A$	---	7	---	
Gate to Drain (Miller) Charge	$Q_{gd}$	$V_{GS}=10V$	---	7	---	
Avalanche Capability	$I_{AV}$	$L=6.51mH$ $T_{ch}=25$	12	---	---	A
Diode Forward On-Voltage	$V_{SD}$	$I_F=9A, V_{GS}=0V, T_{ch}=25$	---	1.0	1.5	V

## 4) Thermal Characteristics

Items	Symbols	Test Conditions	min.	typ.	max.	Units
Channel to Case	$R_{th(ch-c)}$				1.316	/W
Channel to Ambient	$R_{th(ch-a)}$				58.0	/W

\*1 L=6.51mH, Vcc=90V

\*2  $I_F \leq -I_D$ ,  $-di/dt=50A/\mu s$ ,  $V_{cc} \leq BV_{DSS}$ ,  $T_{ch} \leq 150^\circ C$ 

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