

MOS Field Effect Transistor 2SK3296

■ Features

- 4.5 V drive available
- Low on-state resistance
 $R_{DS(on)1} = 12\text{m}\Omega$ MAX. ($V_{GS} = 10\text{ V}$, $I_D = 18\text{ A}$)
- Low gate charge
 $Q_G = 30\text{ nC}$ TYP. ($I_D = 35\text{ A}$, $V_{DD} = 16\text{ V}$, $V_{GS} = 10\text{ V}$)
- Built-in gate protection diode
- Surface mount device available



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

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DSS}	20	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	± 35	A
	I_{Dp}^*	± 140	A
Power dissipation	P_D	$T_A=25^\circ\text{C}$	1.5
		$T_C=25^\circ\text{C}$	40
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	Test conditions	Min	Typ	Max	Unit	
Drain cut-off current	I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0$			10	μA	
Gate leakage current	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0$			± 10	μA	
Gate cutoff voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1.0		2.5	V	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=18\text{A}$	9.0			S	
Drain to source on-state resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=18\text{A}$		8.5	12	$\text{m}\Omega$	
		$V_{GS}=4.5\text{V}, I_D=18\text{A}$		12	19	$\text{m}\Omega$	
Input capacitance	C_{iss}	$I_D=18\text{A}, V_{GS(on)}=10\text{V}, R_G=10\ \Omega, V_{DD}=10\text{V}$		1300		pF	
Output capacitance	C_{oss}		$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$		570		pF
Reverse transfer capacitance	C_{rss}				300		pF
Turn-on delay time	t_{on}				70		ns
Rise time	t_r				1220		ns
Turn-off delay time	t_{off}				100		ns
Fall time	t_f				180		ns