

2SK2116, 2SK2117

Silicon N Channel MOS FET

Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for Switching regulator

Table 1 Ordering Information

Type No.	V _{DSS}
2SK2116	450 V
2SK2117	500 V

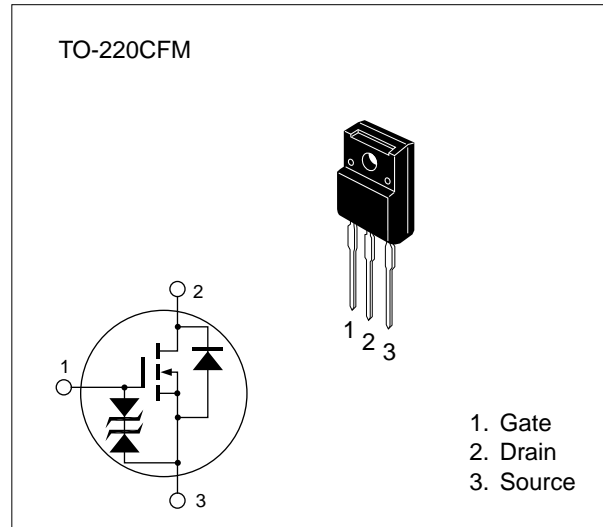


Table 2 Absolute Maximum Ratings (T_a = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK2116	V _{DSS}	450	V
	2SK2117	V _{DSS}	500	
Gate to source voltage		V _{GSS}	±30	V
Drain current		I _D	7	A
Drain peak current		I _{D(pulse)} *	28	A
Body-drain diode reverse drain current		I _{DR}	7	A
Channel dissipation		P _{ch} **	35	W
Channel temperature		T _{ch}	150	°C
Storage temperature		T _{stg}	-55 to +150	°C

* PW ≤ 10 μs, duty cycle ≤ 1 %

** Value at T_c = 25 °C

Table 3 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK2116	450	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
	2SK2117	500	—	—	V	
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	2SK2116	—	—	250	μA	$V_{DS} = 360 \text{ V}, V_{GS} = 0$
	2SK2117	—	—	—	μA	$V_{DS} = 400 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	2SK2116	—	0.6	0.8	Ω	$I_D = 4 \text{ A}, V_{GS} = 10 \text{ V}^*$
	2SK2117	—	0.7	0.9	Ω	
Forward transfer admittance	$ y_{fs} $	4.0	6.5	—	S	$I_D = 4 \text{ A}$ $V_{DS} = 10 \text{ V}^*$
Input capacitance	C_{iss}	—	1050	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	280	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	40	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	$I_D = 4 \text{ A}$
Rise time	t_r	—	55	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	95	—	ns	$R_L = 7.5 \Omega$
Fall time	t_f	—	40	—	ns	
Body-drain diode forward voltage	V_{DF}	—	0.95	—	V	$I_F = 7 \text{ A}, V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	320	—	ns	$I_F = 7 \text{ A}, V_{GS} = 0,$ $diF / dt = 100 \text{ A} / \mu\text{s}$

* Pulse Test

■ See characteristic curve of 2SK1157, 2SK1158.

