FTE10N06NA

N-Channel MOSFET

Lead Free Package and Finish

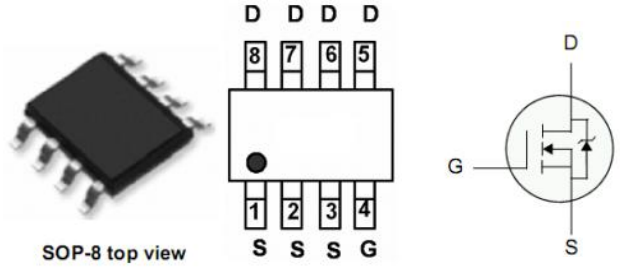
Applications:

- Adaptor
- Charger
- SMPS

V_{DSS}	$R_{DS(ON)}$(Typ.)	I_D
60V	8mΩ	55A

Features:

- RoHS Compliant
- Low ON Resistance
- Low Gate Charge
- Peak Current vs Pulse Width Curve
- Inductive Switching Curves



Ordering Information

PART NUMBER	PACKAGE	BRAND
FTE10N06NA	SOP-8	*IPS*

Absolute Maximum Ratings

T_C=25℃ unless otherwise specified

Symbol	Parameter	FTE10N06NA	Units
V_{DSS}	Drain-to-Source Voltage	60	V
I_D	Continuous Drain Current	55	A
	Continuous Drain Current T_C =100℃	8	A
I_{DM}	Pulsed Drain Current, V_{GS}@10V	32	A
P_D	Power Dissipation	2.5	W
	Derating Factor above 25℃	0.02	W/℃
V_{GS}	Gate-to-Source Voltage	±20	V
E_{AS}	Single Pulse Avalanche Energy	320	mJ
T_L	Maximum Temperature for Soldering	300	℃
T_J and T_{STG}	Operating Junction and Storage Temperature Range	-55 to150	

Thermal Resistance

Symbol	Parameter	Typ.	Max.	Units	Test Conditions
$R_{\theta JA}$	Junction-to-Ambient		50	℃/ W	1 cubic foot chamber, free air.

OFF Characteristics T_C=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	60	--	--	V	V_{GS}=0V, I_D=250μA
$\triangle BV_{DSS}/\triangle T_J$	Breakdown Voltage Temperature Coefficient,	--	0.71	--	V/℃	Reference to 25℃, I_D=250μA
I_{DSS}	Drain-to-Source Leakage Current	--	--	1	μA	V_{DS}=60V, V_{GS}=0V T_J=25℃
		--	--	100		V_{DS}=48V, V_{GS}=0V T_J=125℃
I_{GSS}	Gate-to-Source Forward Leakage	--	--	+100	nA	V_{GS}=+20V
	Gate-to-Source Reverse Leakage	--	--	-100		V_{GS}= -20V

ON Characteristics T_J=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
$R_{DS(ON)}$	Static Drain-to-Source On-Resistance	--	8	10	mΩ	V_{GS}=10V, I_D=4.8A (NOTE *4)
$V_{GS(TH)}$	Gate Threshold Voltage	1	--	3	V	V_{DS}=V_{GS},I_D=250uA
g_{fs}	Forward Transconductance	--	65	--	S	V_{DS}=15V, I_D=8A (NOTE *4)

Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
C_{iss}	Input Capacitance	--	4050	--	pF	V_{GS}= 0V,V_{DS} = 25V f =1.0MHz
C_{oss}	Output Capacitance	--	280	--		
C_{rss}	Reverse Transfer Capacitance	--	180	--		
Q_g	Total Gate Charge	--	57	--	nC	I_D=8A,V_{DD}=30V V_{GS} = 10V
Q_{gs}	Gate-to-Source Charge	--	16	--		
Q_{gd}	Gate-to-Drain (“Miller”) Charge	--	13	--		

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
$t_{d(ON)}$	Turn-on Delay Time	--	21		ns	V_{DD}=30V, I_D=4A, V_G=10V R_G=9.1Ω
t_{rise}	Rise Time	--	27			
$t_{d(OFF)}$	Turn-Off Delay Time	--	63			
t_{fall}	Fall Time	--	30			

Source-Drain Diode Characteristics Tc=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
I_S	Continuous Source Current (Body Diode)	--	--	8	A	T_C=25℃
I_{SM}	Maximum Pulsed Current (Body Diode)	--	--	32	A	
V_{SD}	Diode Forward Voltage	--	--	1.5	V	I_{SD}=8A, V_{GS}=0V
t_{rr}	Reverse Recovery Time	--	42	45	ns	I_S=8A, di/dt=100A/us
Q_{rr}	Reverse Recovery Charge	--	85	91	nC	

Notes:

*1. T_J = +25℃ to +150℃.

*2. Repetitive rating; pulse width limited by maximum junction temperature.

*3. di/dt < 100 A/μs, V_{DD} < BV_{DSS}, T_J=+150℃.

*4. Pulse width < 380μs; duty cycle < 2%.

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