Description

The FTK806N03F is the new generation trench N-ch MOSFET has been designed to minimize the on-state resistance (RDS(ON)) yet maintain superior switching performance, making it ideal for high efficiency power management applications

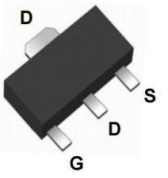
V_{DSS}	60V
I_D	5.0A
$R_{DS(ON)}$	80mΩ@ V_{GS}=4.5V
$R_{DS(ON)}$	65mΩ @ V_{GS}=10V

Features

- High - speed switching
- Excellent gate charge x Rds(ON) procuct (FOM)
- for extremely low RDS(ON)
- Lead-Free,Halogen-Free; RoHS Compliant

Outline

SOT-89 Pin Configuration

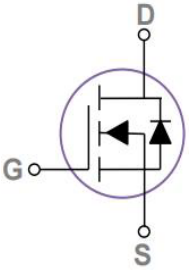


Applications

- LED Applications
- Load Switch
- Power Management
- Networking

Equivalent

(1) Gate
(3) Source
(2,4) Drain



Packaging specifications

Part No.	Package	Marking	Basic ordering unit.(pcs)
FTK806N03F	SOT-89	RM806N03	1000 **Absolute**

Maximum Ratings

Parameter		Symbol	Limit	Units
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous(Note2)	T_C=25°C	I_D	5.0	A
	T_C=70°C		4.2	A
-Pulsed(Note 1、Note 2)		I_{DM}	20	A
Maximum Power Dissipation	T_C=25°C	P_D	3.5	W
	T_C=70°C		3.0	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	70	°C /W

Electrical Characteristics (T_C=25 ℃, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V , $I_{D=}$ 250uA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V , V_{GS}=0V			1	uA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±20V , V_{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D=250uA	1.0	1.6	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS} =10V , I_D =4A		65	75	mΩ
		V_{GS} =4.5V , I_D =3A		80	95	mΩ
Forward Transconductance	g_{FS}	Vg_S =10V , I_D =3A		7		S
DYNAMIC CHARACTERISTICS Note4						
Input Capacitance	C_{ISS}	V_{DS} =30V , V_{GS} =0 V , f =1.0MHz		380		pF
Output Capacitance	C_{OSS}			30		pF
Reverse Transfer Capacitance	C_{RSS}			20		pF
Total Gate Charge	Qg	V_{DS} =30V , I_D =3A , V_{GS} =10V		4.6		nC
Gate-Source Charge	Qgs	V_{DS} =30V , I_D =3A , V_{GS} =10V		0.5		nC
Gate-Drain Charge	Qgd			2		nC
SWITCHING CHARACTERISTICS Note4						
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} =30V , I_D =3A , V_{GS} =10V , R_{GEN} =6Ω		3.0		ns
Rise Time	tr			10		ns
Turn-Off Delay Time	tD(OFF)			19		ns
Fall Time	tf			5.5		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=1A			1.0	V

Notes：

1、Pulse Test Width < 300us,Duty Cycle< 2%

2、Drain current limited by maximum junction temperature.

3、Guaranteed by design,not subject to production testing.

Typical Performance Characteristics

Fig.1 Continuous Drain Current vs. TC

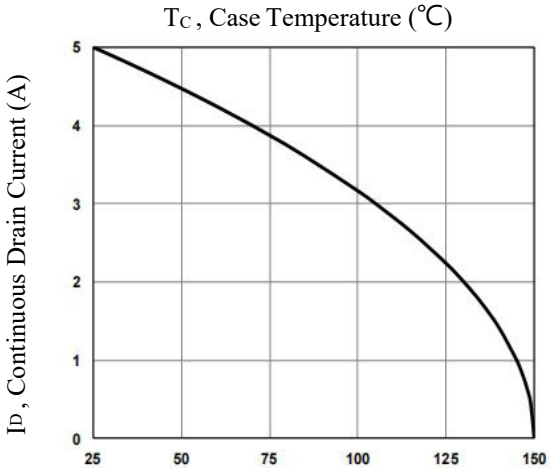


Fig.2 Normalized RDSON vs. TJ

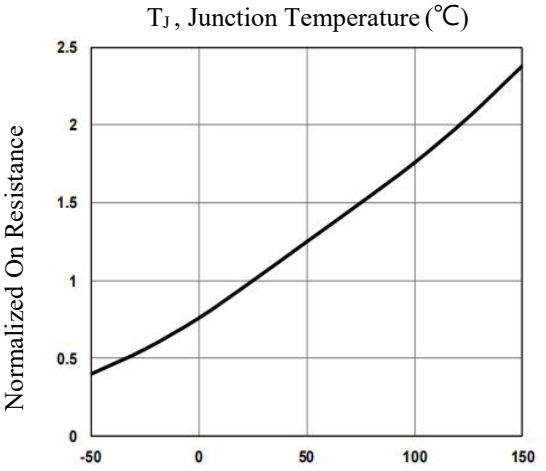


Fig.3 Normalized Vth vs. TJ

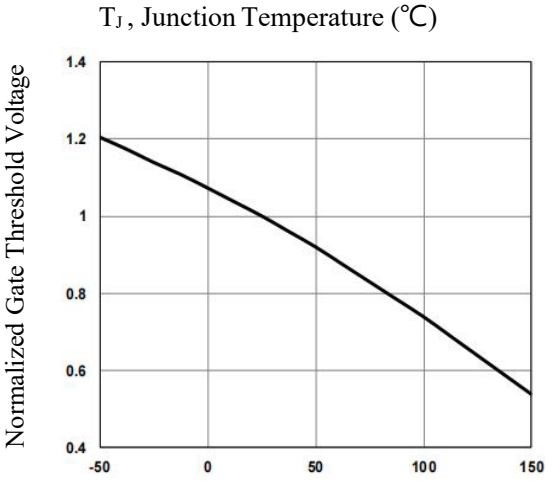


Fig.4 Gate Charge Waveform

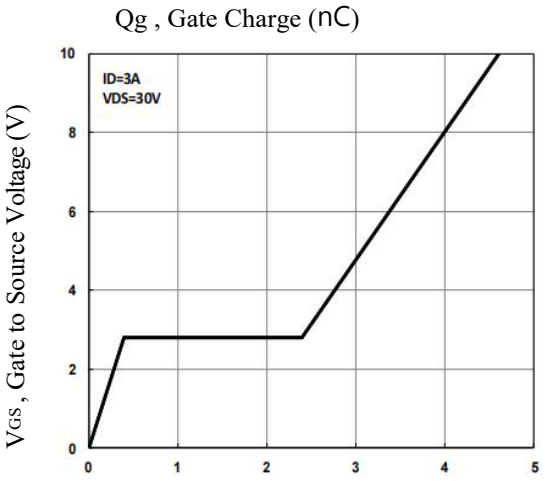


Fig.5 Typical Output Characteristics

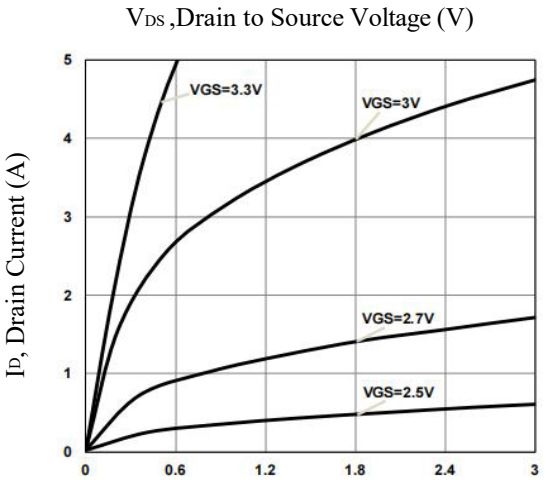


Fig.6 Turn-On Resistance vs. ID

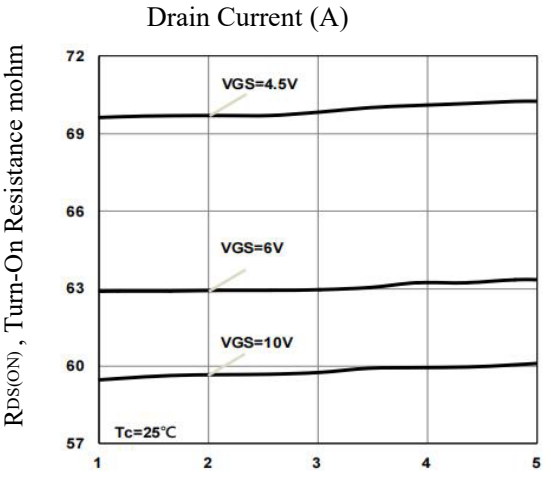


Fig.7 Capacitance Characteristics

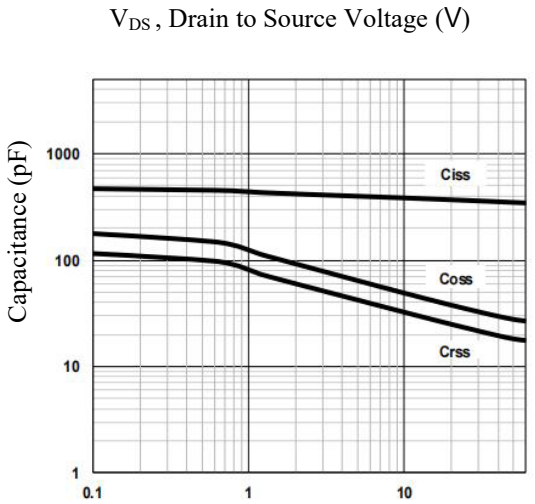


Fig.8 Normalized Transient Impedance

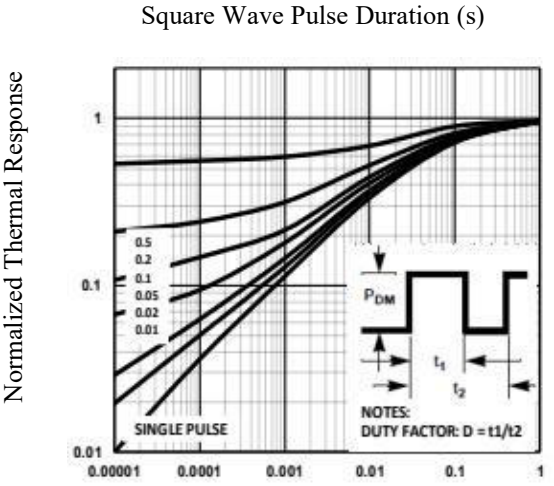


Fig.9 Maximum Safe Operation Area

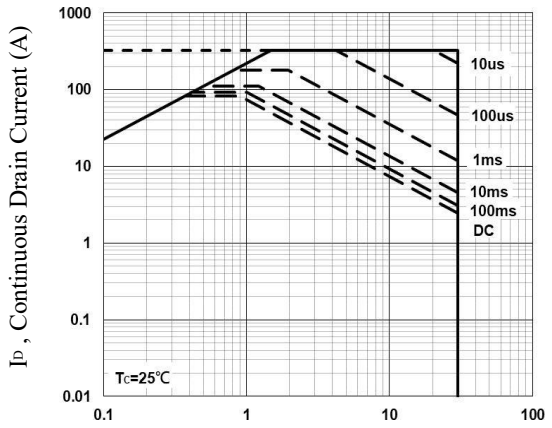
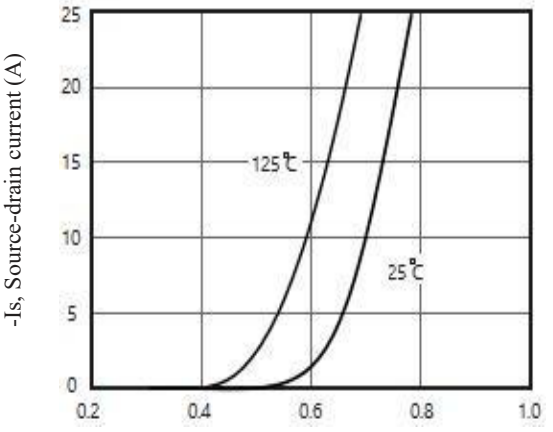
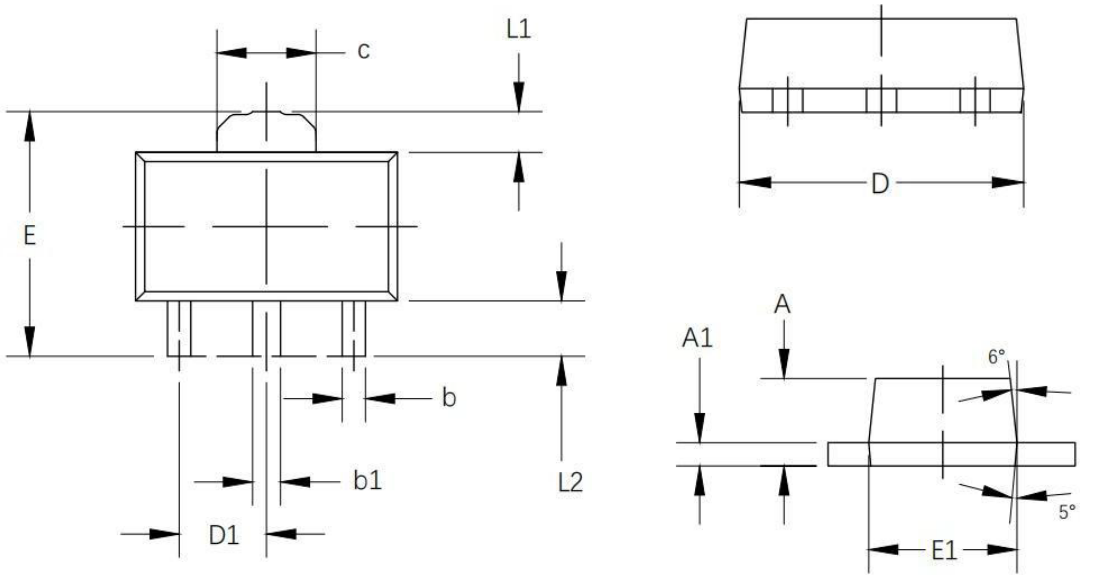


Fig.10 Body Diode Forward Voltage

Variation with Source Current



SOT-89 Package Information



COMMON DIMENSION(MM)			
SOT-89-3L PKG			
SYMBOL	MIN	TYP	MAX
A	1.450	1.500	1.550
A1	0.373	0.381	0.389
b	0.415	0.440	0.465
b1	0.495	0.520	0.545
c	1.675	1.700	1.725
D	4.445	4.500	4.550
D1	1.470	1.500	1.550
E	4.100	4.200	4.300
E1	2.450	2.500	2.550
L1	0.630	0.680	0.730
L2	0.890	0.940	0.990