General Description

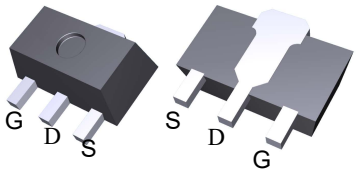
The MY6N03A use Trench Power MV MOSFET technology,have Excellent package for heat dissipation,use High density cell design for low $R_{DS(ON)}$

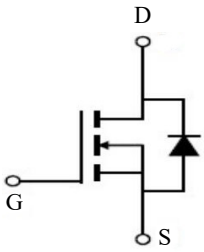
Features

V_{DSS}	30	V
I_D	6	A
$R_{DS(ON)}$(atV_{GS}=4.5V)	<28	mΩ
$R_{DS(ON)}$(atV_{GS}=2.5V)	<40	mΩ

Application

- DC-DC Converters
- Power management functions





Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY6N03A	SOT-89	6N03A	1000

Absolute Maximum Ratings (T_C=25℃unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30V	V
Gate-source Voltage		V_{GS}	±12	V
Drain Current		I_D	6	A
Pulsed Drain Current [A]		I_{DM}	12	A
Avalanche energy [B]		E_{AS}	8	mJ
Total Power Dissipation [C]	T_A=25℃	P_D	1.2	W
	T_A=70℃		0.8	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

Electrical Characteristics at T_j=25 ℃ unless otherwise specified

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	30	---	---	V
$\triangle BV_{DSS}/\triangle T_J$	BVDSS Temperature Coefficient	Reference to 25℃ , I_D=1mA	---	0.021	---	V/℃
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=10V , I_D=5A	---	24	28	mΩ
		V_{GS}=4.5V , I_D=4A	---	34	40	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	0.9	1.2	2.5	V
$\triangle V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	-5	---	mV/℃
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V , V_{GS}=0V , T_J=25℃	---	---	1	uA
		V_{DS}=24V , V_{GS}=0V , T_J=55℃	---	---	5	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=5V , I_D=5A	---	7	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	2.5	5	Ω
Q_g	Total Gate Charge (4.5V)	V_{DS}=15V , V_{GS}=4.5V , I_D=5A	---	6	8.4	nC
Q_{gs}	Gate-Source Charge		---	2.5	3.5	
Q_{gd}	Gate-Drain Charge		---	2.1	2.9	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=10V , R_G=3.3 I_D=5A	---	2.4	4.8	ns
T_r	Rise Time		---	7.8	14	
$T_{d(off)}$	Turn-Off Delay Time		---	22	44	
T_f	Fall Time		---	4	8	
C_{iss}	Input Capacitance	V_{DS}=15V , V_{GS}=0V , f=1MHz	---	572	800	pF
C_{oss}	Output Capacitance		---	81	112	
C_{rss}	Reverse Transfer Capacitance		---	65	91	
I_S	Continuous Source Current[1,4]	V_G=V_D=0V , Force Current	---	---	5.8	A
I_{SM}	Pulsed Source Current[2,4]		---	---	30	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=3A , T_J=25℃	---	---	1.2	V
t_{rr}	Reverse Recovery Time	I_F=5A , dI/dt=100A/μs T_J=25℃	---	19	---	nS
Q_{rr}	Reverse Recovery Charge		---	1.04	---	nC

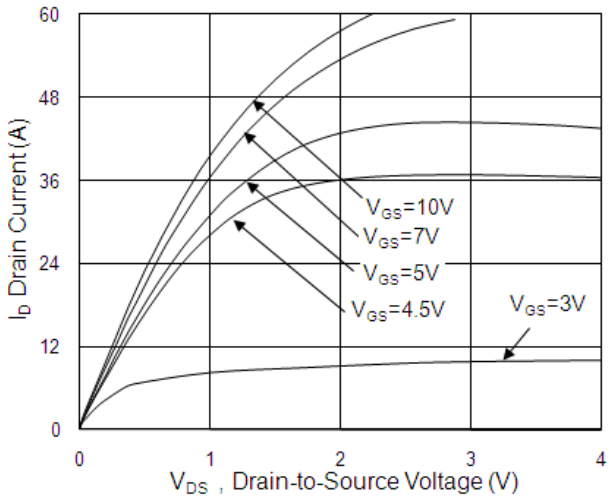


Fig.1 Typical Output Characteristics

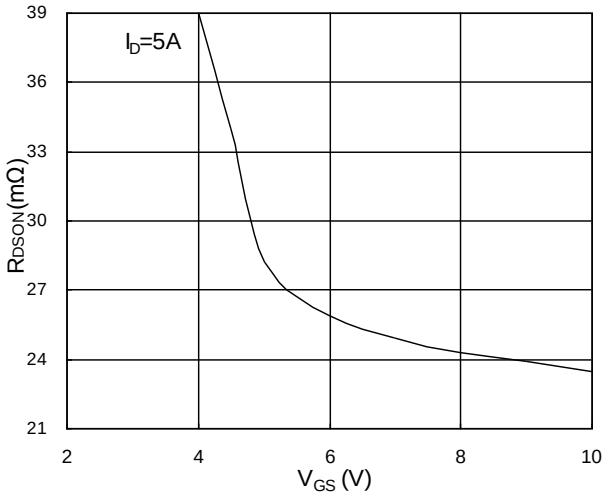


Fig.2 On-Resistance vs. G-S Voltage

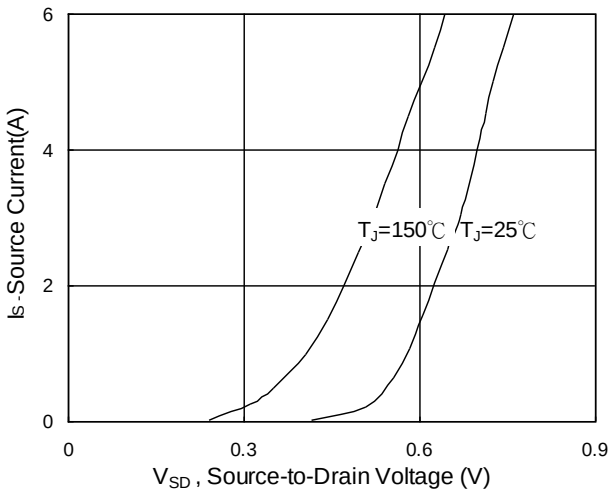


Fig.3 Forward Characteristics Of Reverse

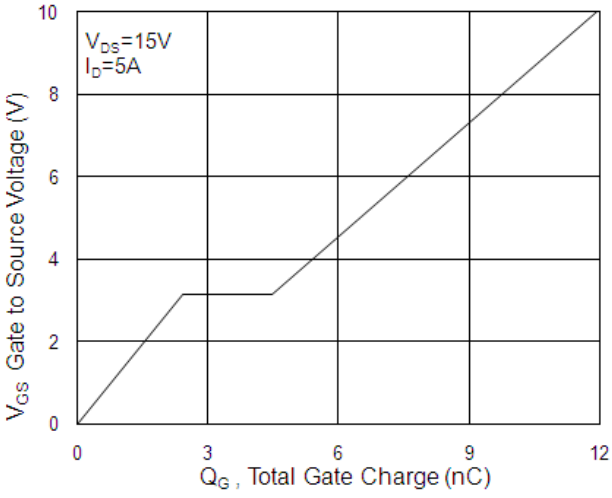


Fig.4 Gate-Charge Characteristics

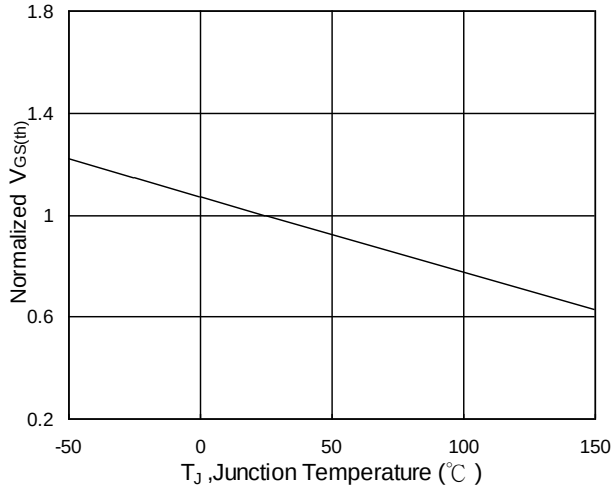


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

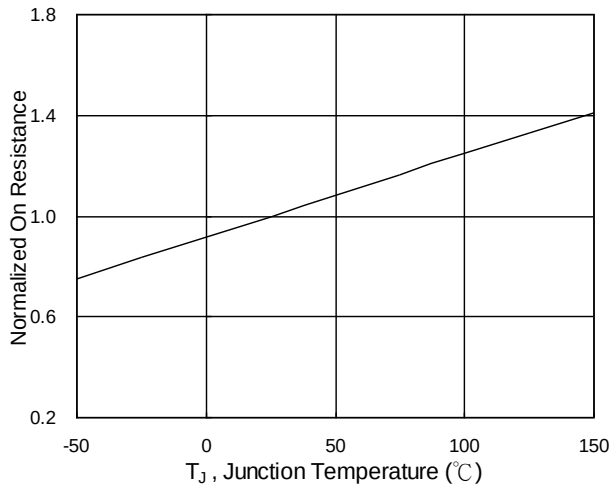


Fig.6 Normalized R_{DSON} vs. T_J

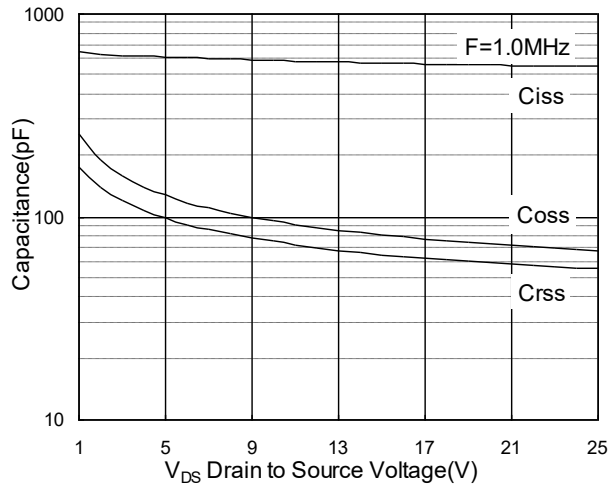


Fig.7 Capacitance

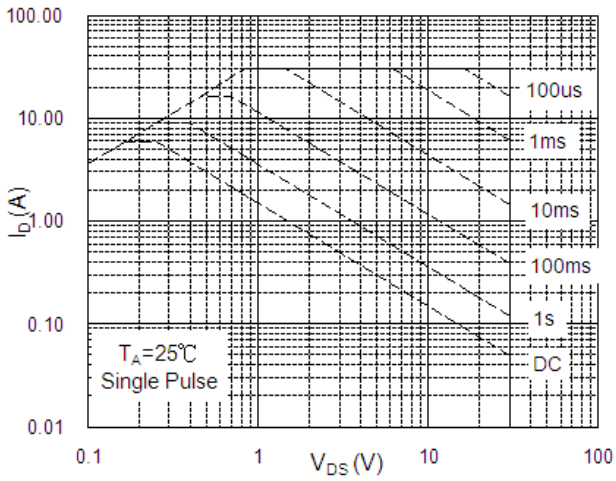


Fig.8 Safe Operating Area

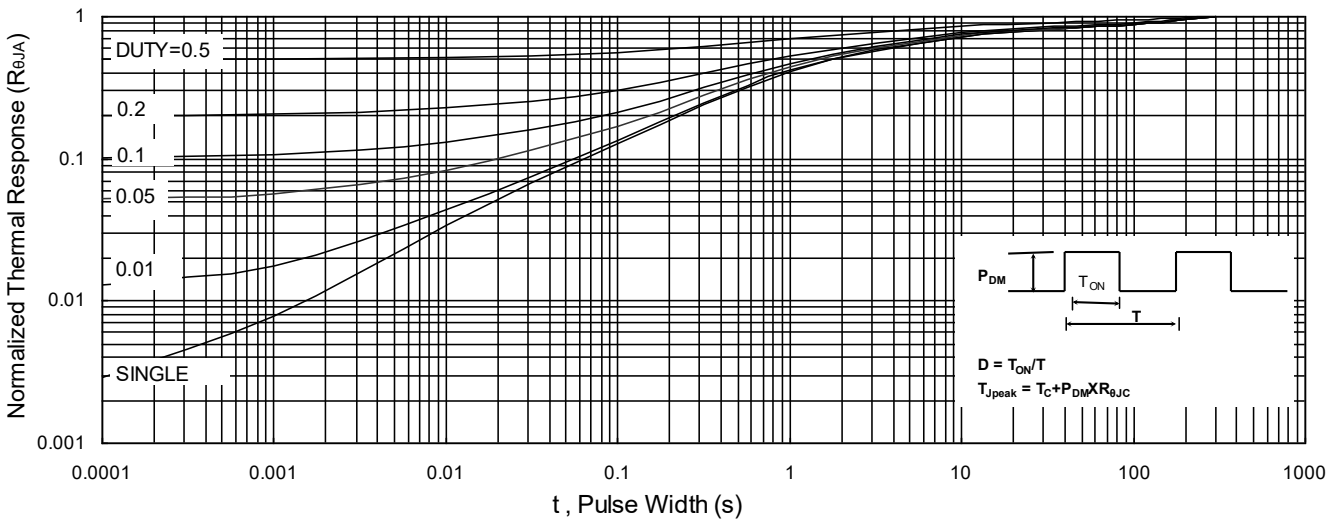


Fig.9 Normalized Maximum Transient Thermal Impedance

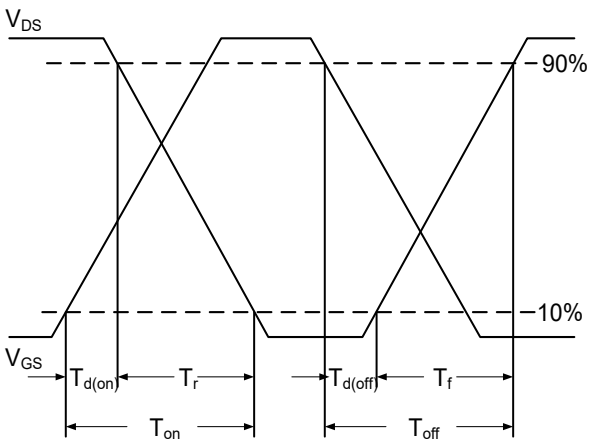


Fig.10 Switching Time Waveform

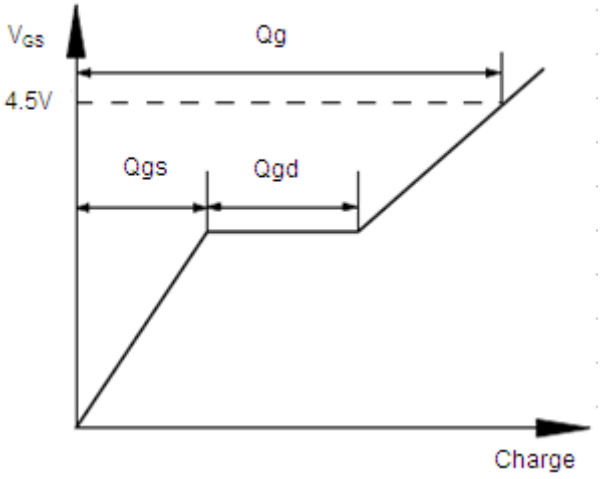
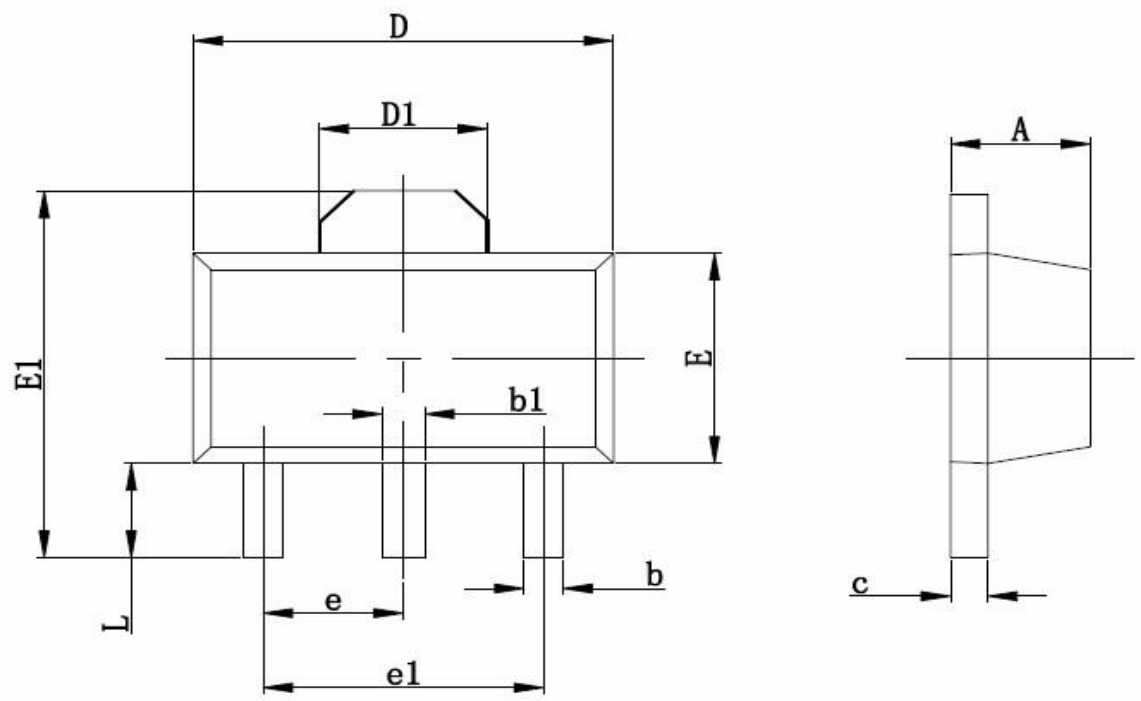


Fig.11 Gate Charge Waveform



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.350	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.350	2.550	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060TYP	
e1	3.000 TYP		0.118TYP	
L	0.900	1.100	0.035	0.047