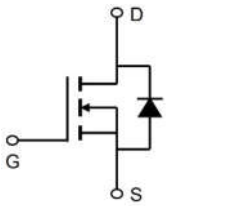
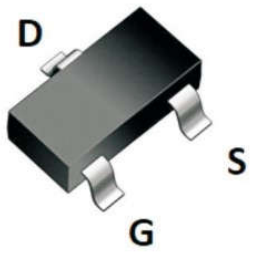
600V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	100mA
V_{DSS}	600V
R_{DSON}-typ(@V_{GS}=10V)	< 300Ω(Type:80 Ω)





SOT-23

Application

- Uninterruptible Power Supply(UPS)
- Power Factor Correction (PFC)

Product Specification Classification

Part Number	Package	Marking	Pack
YFW01N60	SOT-23	MK127	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	600	V
Gate - Source Voltage	V_{GS}	±20	V
Drain Current[3], V_{GS} @ 10V @T_A=25℃	I_D	100	mA
Drain Current[3], V_{GS} @ 10V @T_A=70℃	I_D	21	mA
Pulsed Drain Current[1]	I_{DM}	150	mA
Total Power Dissipation @T_A=25℃	P_D	0.5	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Maximum Thermal Resistance, Junction-ambient[3]	$R_{\theta JA}$	250	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	600	650	-	V
Static Drain-Source On-Resistance[2]	V_{GS}=10V, I_D=16mA	$R_{DS(ON)}$	-	80	300	Ω
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	$V_{GS(th)}$	2	2.3	4	V
Forward Transconductance	V_{DS}=10V, I_D=16mA	gfs	-	28	-	mS
Drain-Source Leakage Current	V_{DS}=480V , V_{GS}=0V	I_{DSS}	-	-	25	μA
Gate- Source Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Total Gate Charge[2]	I_D=0.1A V_{DS}=200V V_{GS}=10V	Q_g	1.8	2.5	3.2	nC
Gate-Source Charge		Q_{gs}	-	1.3	-	
Gate-Drain ("Miller") Charge		Q_{gd}	-	0.8	-	
Turn-on delay time[2]	V_{DS}=300V I_D=10mA R_G=3.3Ω V_{GS}=10V R_D=30KΩ	$t_{d(on)}$	-	11.5	-	ns
Rise Time		T_r	-	14.5	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	14	-	
Fall Time		t_f	-	120	-	
Input Capacitance	V_{GS}=0V V_{DS}=25V f=1MHz	C_{iss}	8.8	12.5	16.2	pF
Output Capacitance		C_{oss}	7	10	13	
Reverse Transfer Capacitance		C_{rss}	5	7	9	
Forward Voltage [2]	V_{GS}=0V , I_S=0.05A	V_{SD}	-	-	1.5	V

Notes:
1.Pulse width limited by Max. junction temperature.
2.Pulse test
3.Mounted on min. copper pad

Ratings and Characteristic Curves

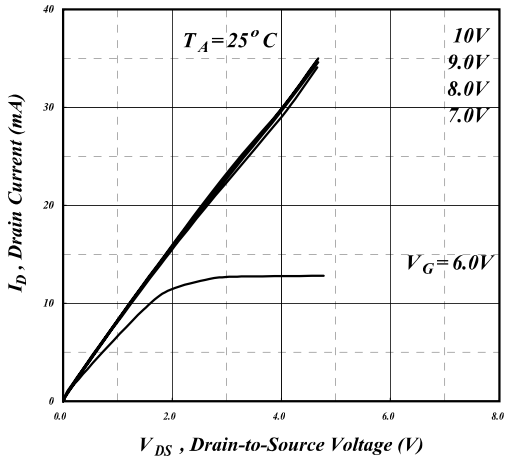


Fig 1. Typical Output Characteristics

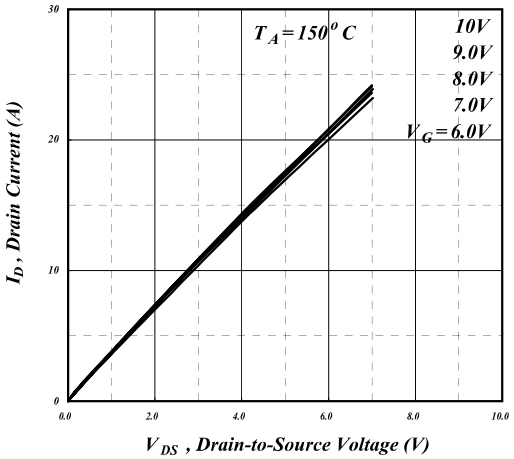


Fig 2. Typical Output Characteristics

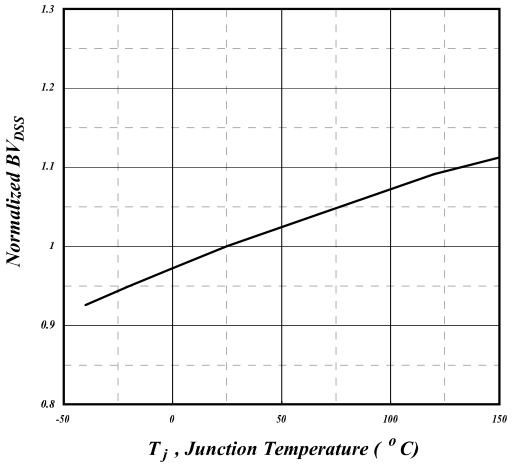


Fig 3. Normalized BV_{DSS} v.s. Junction Temperature

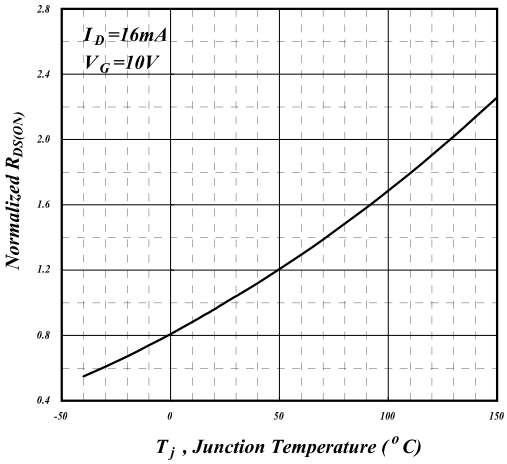


Fig 4. Normalized On-Resistance v.s. Junction Temperature

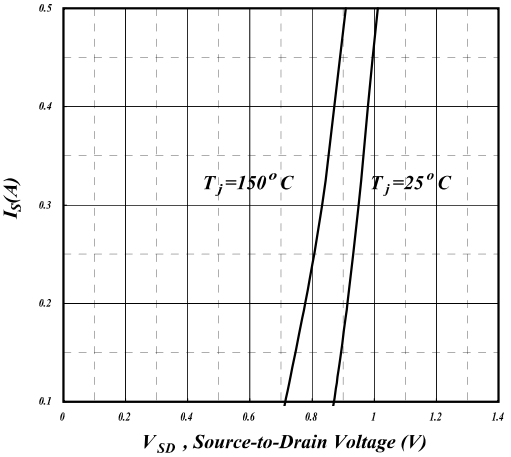


Fig 5. Forward Characteristic of Reverse Diode

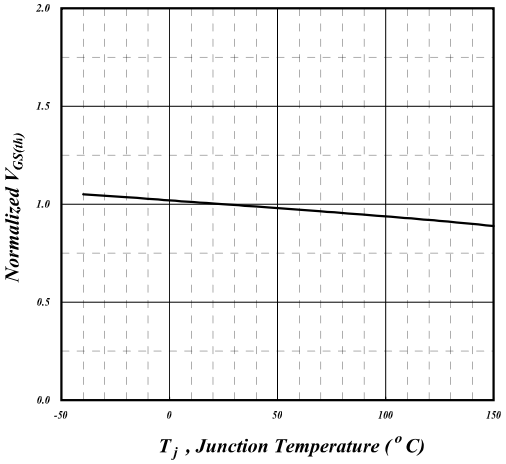


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

Ratings and Characteristic Curves

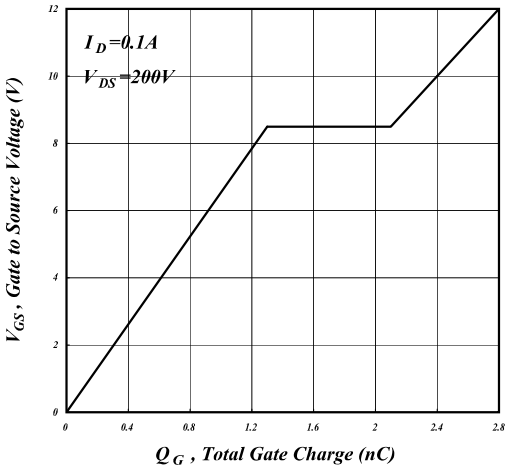


Fig 7. Gate Charge Characteristics

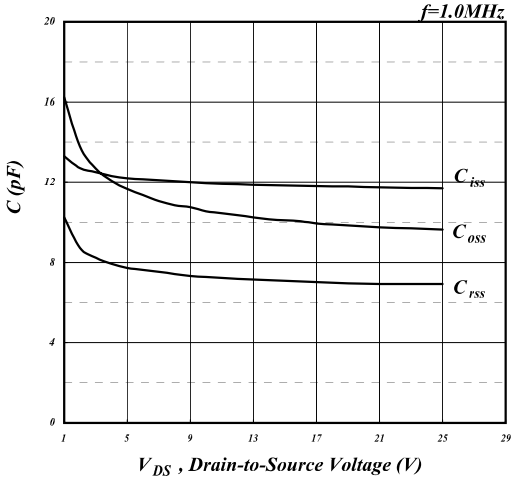


Fig 8. Typical Capacitance Characteristics

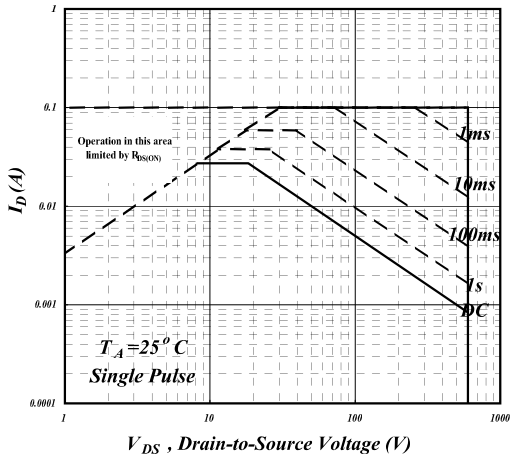


Fig 9. Maximum Safe Operating Area

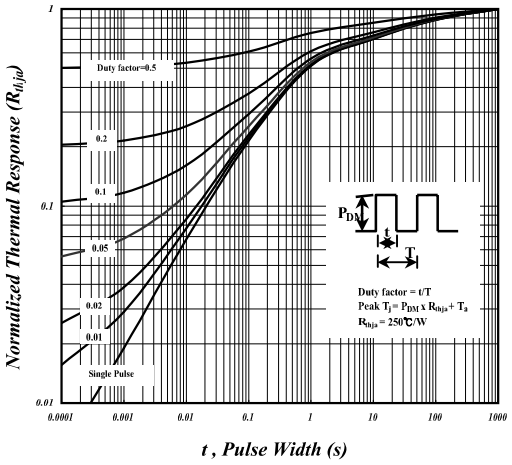


Fig 10. Effective Transient Thermal Impedance

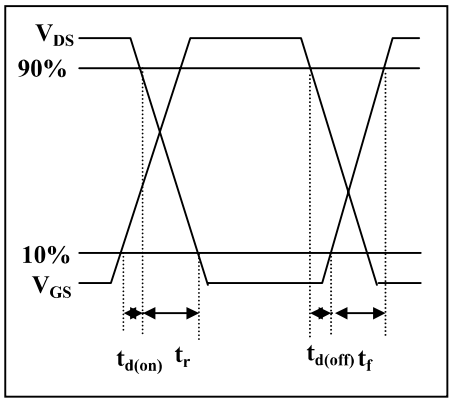


Fig 11. Switching Time Waveform

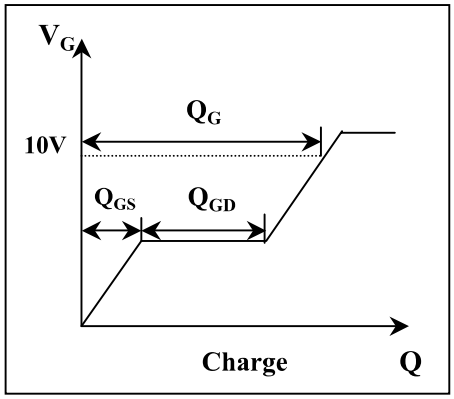


Fig 12. Gate Charge Circuit

Package Outline Dimensions Millimeters

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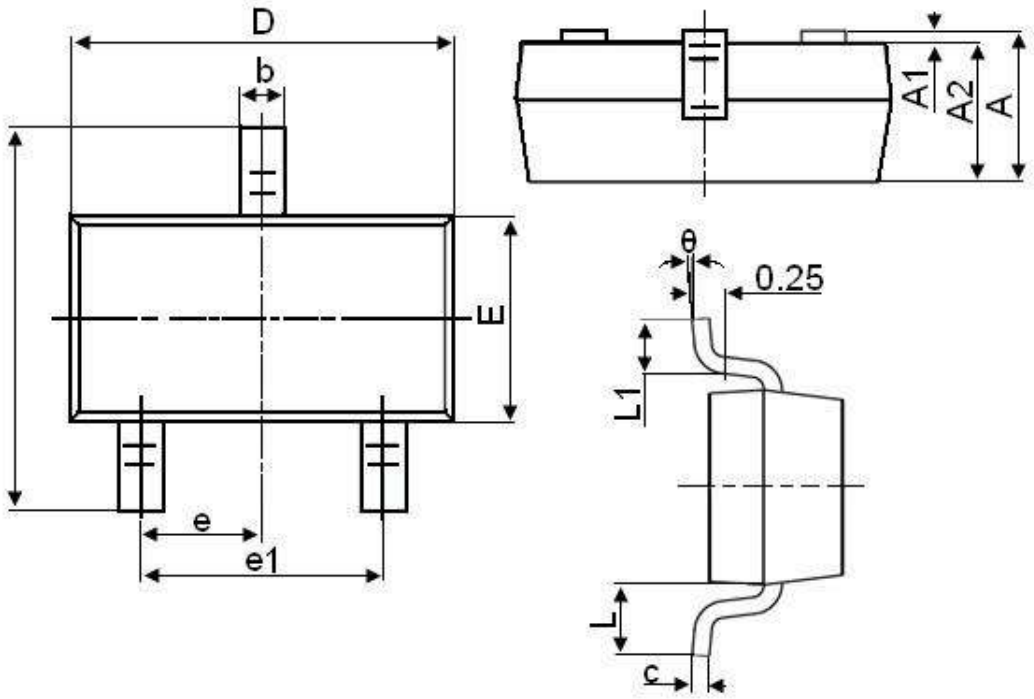

Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°