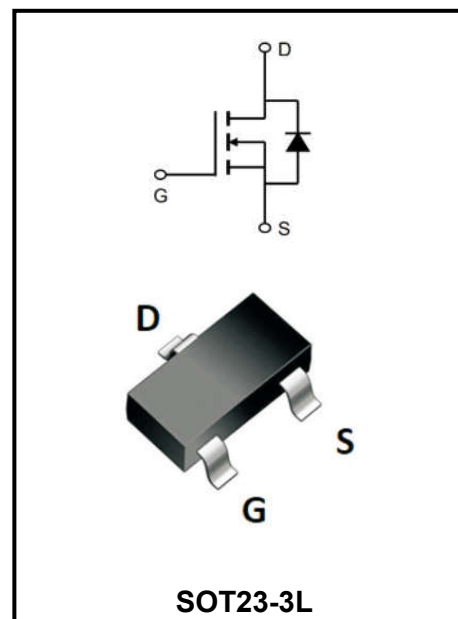


40V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	5.0A
V_{DS}	40V
$R_{DS(on)-typ}(@V_{GS}=10V)$	$< 85m\Omega$ (Typ: 65 mΩ)



Marking Code

YFW5N04MI

5N04

FEATURES

- ♦ High density cell design for low RDS(ON)
- ♦ Voltage controlled small signal switch
- ♦ Rugged and reliable
- ♦ High saturation current capability
- ♦ Load Switch for Portable Devices
- ♦ Mounting Position: Any.

Mechanical Data

- ♦ Case: SOT23-3L
- ♦ Epoxy UL: 94V-0.
- ♦ Mounting Position: Any.

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	40	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (T _A =25°C)	I_D	5.0	A
Continuous Drain Current (T _A =75°C)	I_D	3.5	A
Pulsed Drain Current	I_{DM}	20	A
Total Power Dissipation	P_D	2	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	150	°C
Thermal Resistance Junction-ambient	$R_{\theta JA}$	62.5	°C/W

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Test Conditions	Symbol	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	40			V
Gate-Threshold voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1	1.6	2.5	V
Gate-body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}			± 100	nA
Zero Gate Voltage Drain current	$V_{DS}=40V, V_{GS}=0V$	I_{DSS}			1	μA
Drain-Source On-Resistance	$V_{GS}=10V, I_D=3A$	$R_{DS(on)}$		65	85	m Ω
	$V_{GS}=4.5V, I_D=2A$			90	120	
Input capacitance	$V_{DS}=20V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}		596		pF
Output capacitance		C_{oss}		90		
Reverse Transfer capacitance		C_{rss}		70		
Total gate charge	$V_{DS}=20V$ $V_{GS}=10V$ $I_D=3A$	Q_g		14		nC
Gate-source charge		Q_{gs}		2.9		
Gate-drain charge		Q_{gd}		3.8		
Turn-on Time	$V_{DD}=20V$ $I_D=3A$ $V_{GS}=10V$ $R_G=3\Omega$	$t_{d(on)}$		9		ns
Rise time		T_r		8		
Turn-off Time		$t_{d(OFF)}$		28		
Fall time		t_f		10		
Diode Forward current		I_S			4	A
Diode Forward voltage	$I_S=0.3A, V_{GS}=0V$	V_{SD}			1.2	V

Typical Characteristics

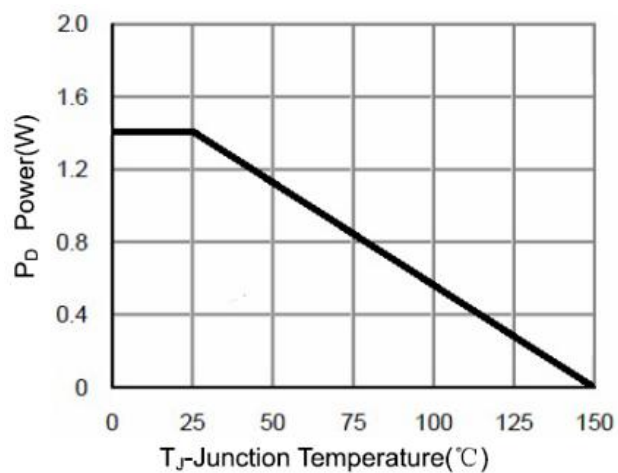


Figure 1 Power Dissipation

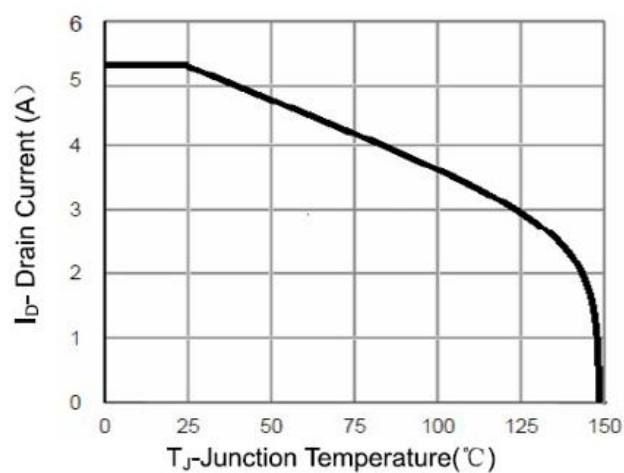


Figure 2 Drain Current

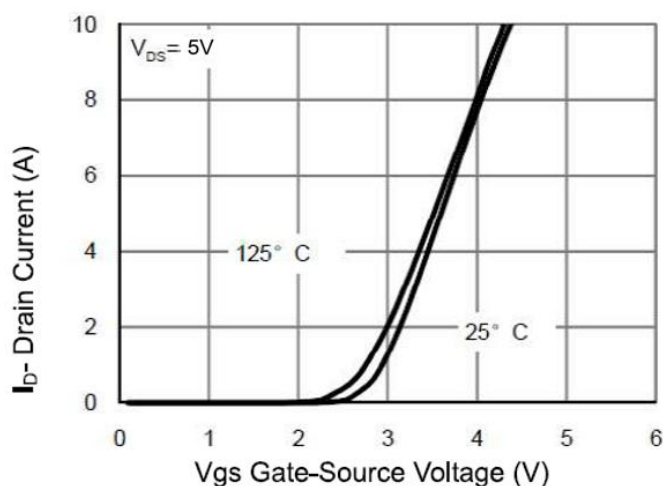
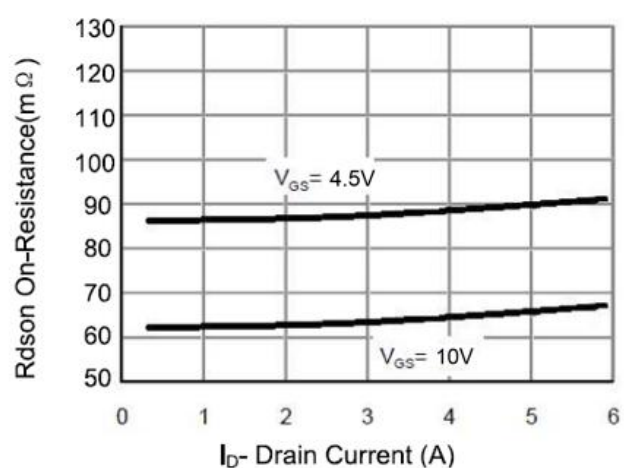
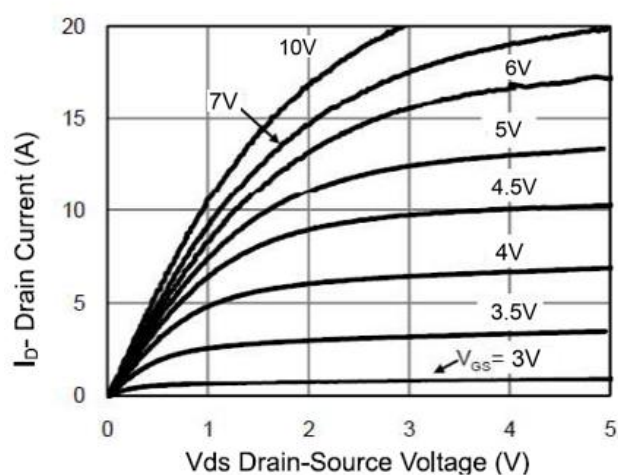


Figure 5 Transfer Characteristics

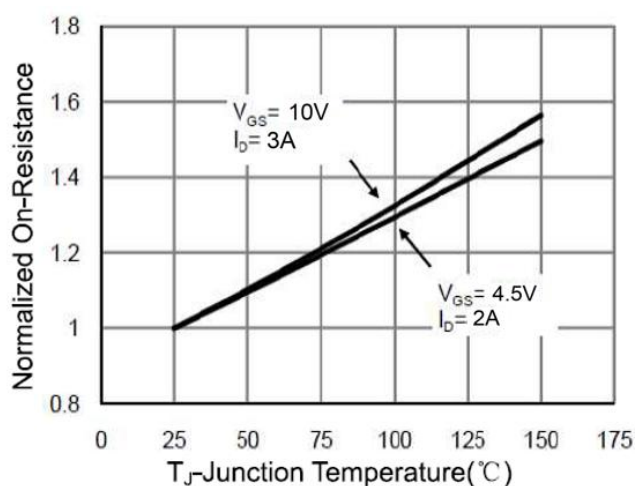


Figure 6 Drain-Source On-Resistance

Typical Characteristics

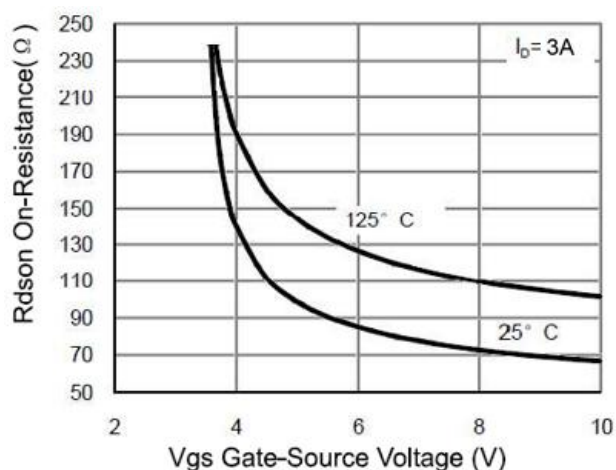


Figure 7 Rdson vs Vgs

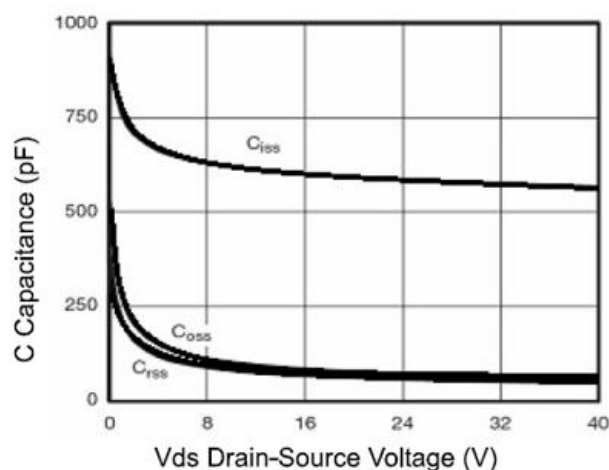


Figure 8 Capacitance vs Vds

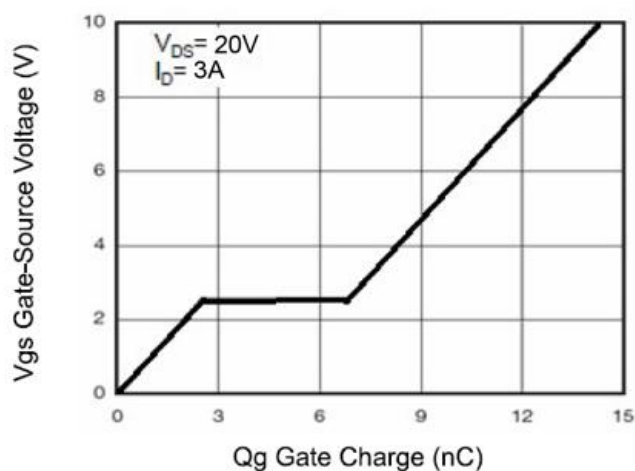


Figure 9 Gate Charge

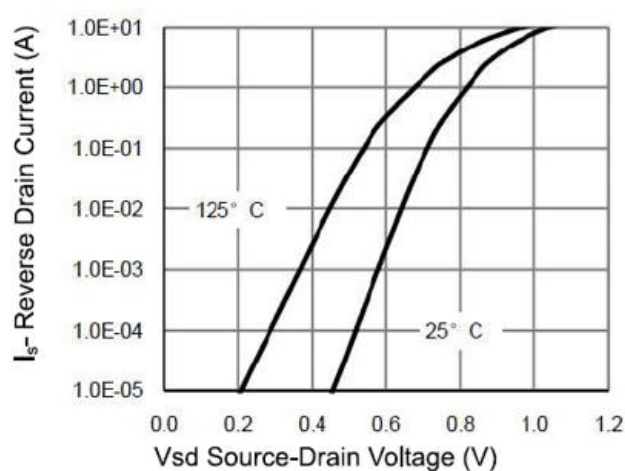


Figure 10 Source- Drain Diode Forward

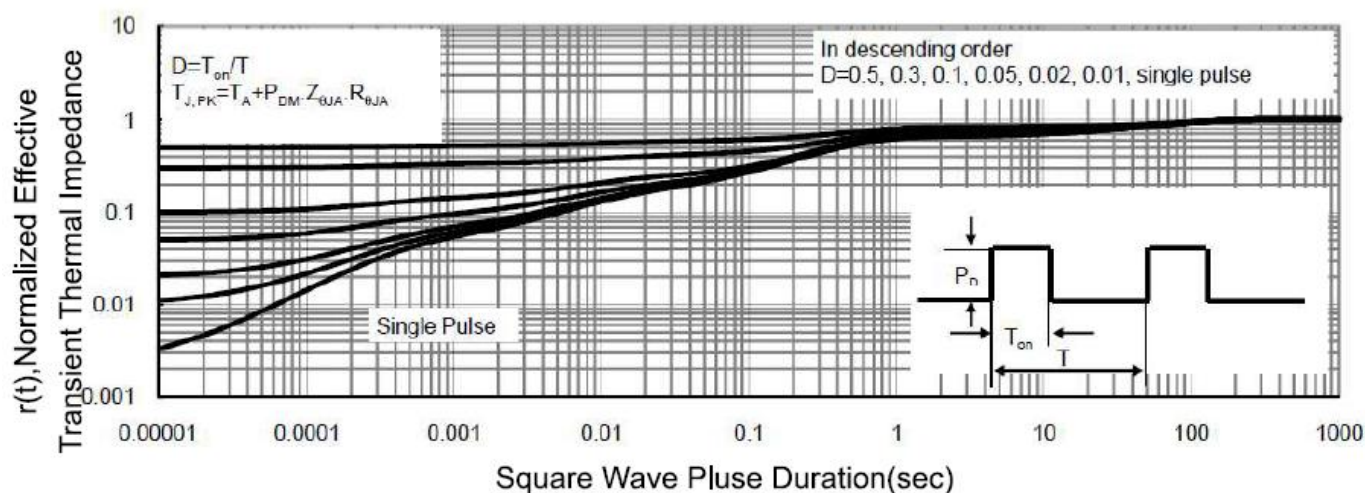


Figure 11 Normalized Maximum Transient Thermal Impedance

Ordering information

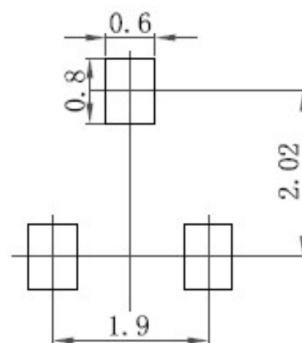
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT23-3L

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
e	0.95		37.4	
e1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

The recommended mounting pad size



Disclaimer

The information presented in this document is for reference only. Guangdong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.