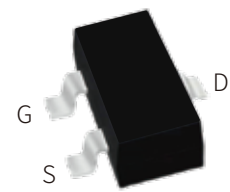


FEATURES

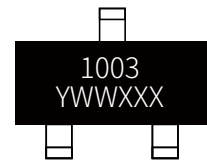
- | Surface-mounted package
- | Advanced trench cell design



SOT-23

APPLICATION

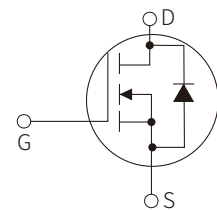
- | LCD TV appliances
- | LCDM appliances
- | High power inverter system



Marking

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage $T_A=25^\circ\text{C}$	V_{DS}	100	V
Drain Current (Pulsed) $T_A=25^\circ\text{C}$ $V_{GS}=10\text{V}$	I_{DM}^{**}	8	A
Drain Current $T_A=25^\circ\text{C}$ $V_{GS}=10\text{V}$	I_D^*	3	A
Gate-Source Voltage $T_A=25^\circ\text{C}$	V_{GS}	± 20	V
Total Power Dissipation $T_A=25^\circ\text{C}$	P_{tot}^*	0.83	W
Diode Forward Current $T_A=25^\circ\text{C}$	I_S^*	3	A
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance – Junction to Ambient	$R_{\theta JA}^*$	150	$^\circ\text{C/W}$

Notes:

- * Surface Mounted on 1 in² pad area, $t \leq 10$ sec
- ** Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$
- *** limited by bonding wire

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	1		3	V
Drain Leakage Current	I _{DSS}	V _{DS} =80V, V _{GS} =0V			1	μA
		V _{DS} =80V, V _{GS} =0V, T _J =85°C			30	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
On-State Resistance	R _{DS(on)} ^a	V _{GS} =10V, I _{DS} =2A		135	160	mΩ
		V _{GS} =4.5V, I _{DS} =2A		200	280	mΩ
Diode Characteristics						
Diode Forward Voltage	V _{SD} ^a	I _{SD} =2A, V _{GS} =0V			1.3	V
Reverse Recovery Time	t _{rr}	I _{DS} =2A, V _{GS} =0V dI _{SD} /dt=100A/μs		22		nS
Reverse Recovery Charge	Q _{rr}			16.5		nC
Dynamic Characteristics^b						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, Frequency = 1 MHz		161		pF
Output capacitance	C _{oss}			29		pF
Reverse transfer capacitance	C _{rss}			14		pF
Turn-on Delay Time	t _{d(on)}	V _{DS} =50V, V _{GEN} =10V R _G =3.9Ω, R _L =16.6Ω, I _{DS} =2A		3.6		nS
Turn-on Rise Time	t _r			3.6		nS
Turn-Off Delay Time	t _{d(off)}			8.8		nS
Turn-Off Fall Time	t _f			7		nS
Gate Charge Characteristics^b						
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _{DS} =2A		4.9		nC
Gate-Source Charge	Q _{gs}			1.6		nC
Gate-Drain Charge	Q _{gd}			0.55		nC

Notes:

a : Pulse test ; pulse width ≤ 300μs, duty cycle ≤ 2 %

b : Guaranteed by design, not subject to production testing

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

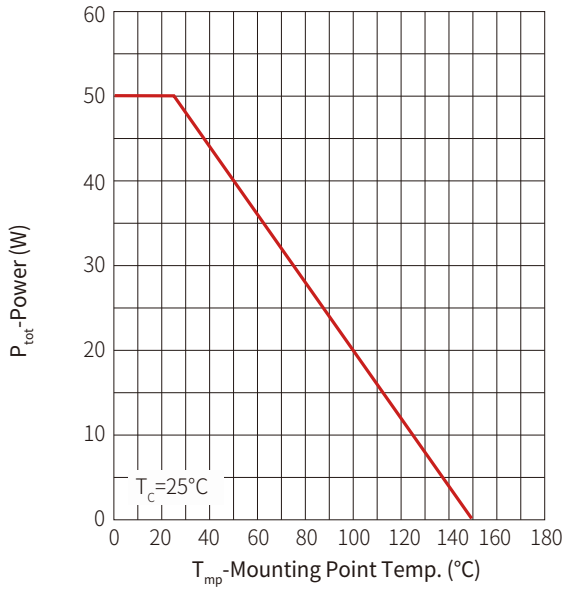


Figure2: Current Capability

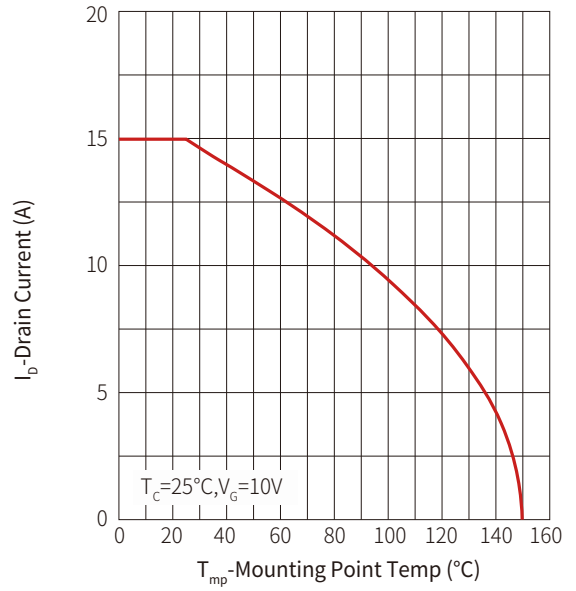


Figure3: Safe operating Area

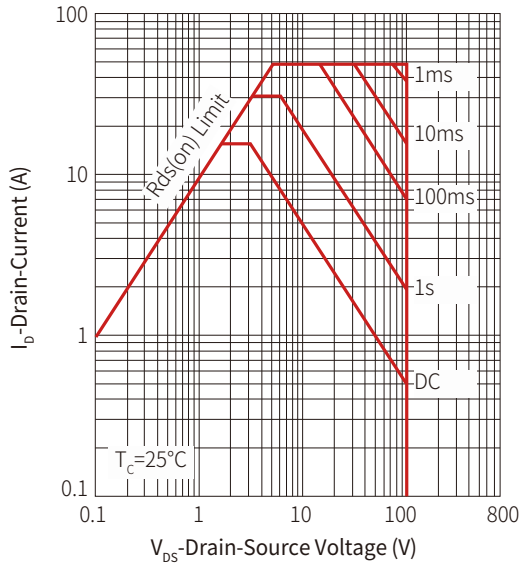


Figure 4: Transient Thermal Impedance

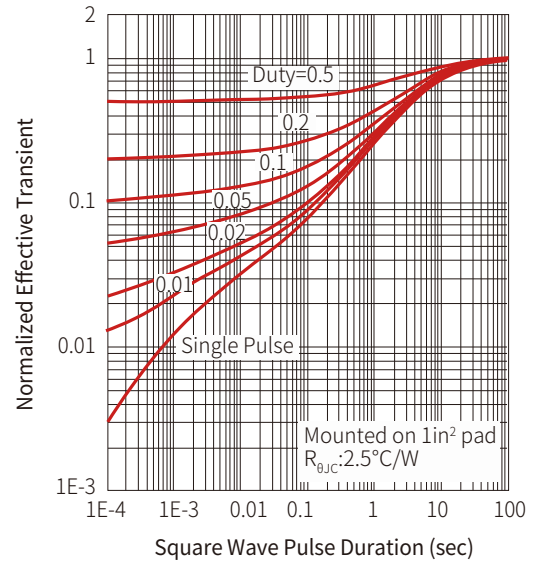


Figure 5: Output Characteristics

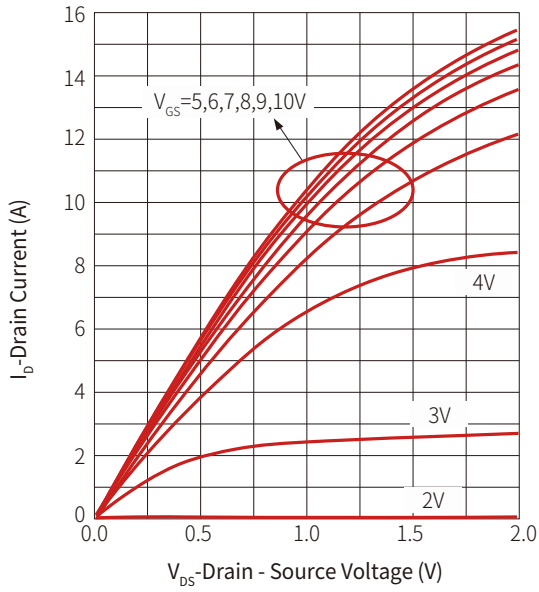


Figure 6: On Resistance

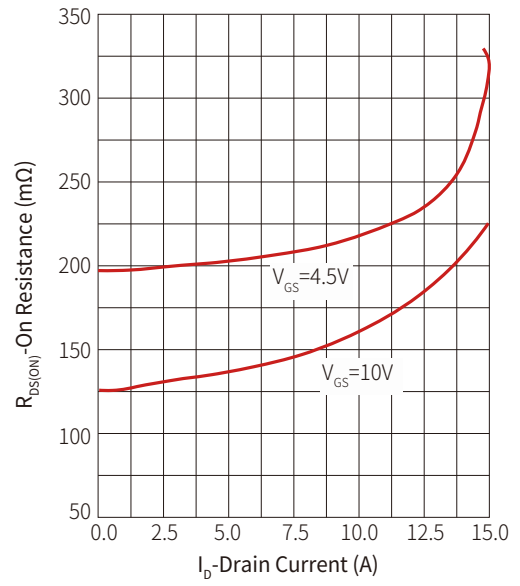


Figure 7: Transfer Characteristics

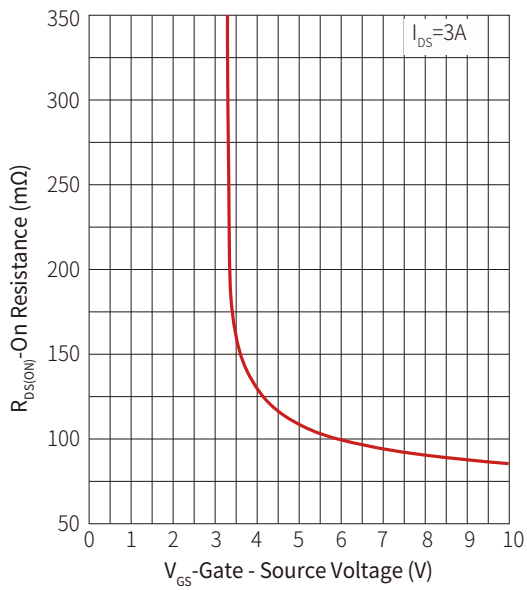


Figure 8: Normalized Threshold Voltage

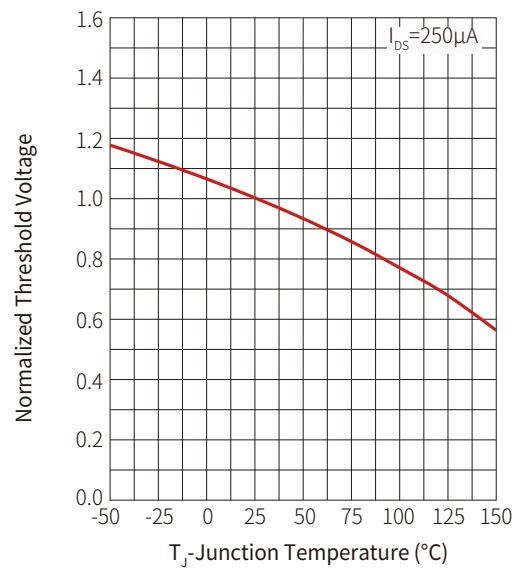


Figure 9: Normalized On Resistance

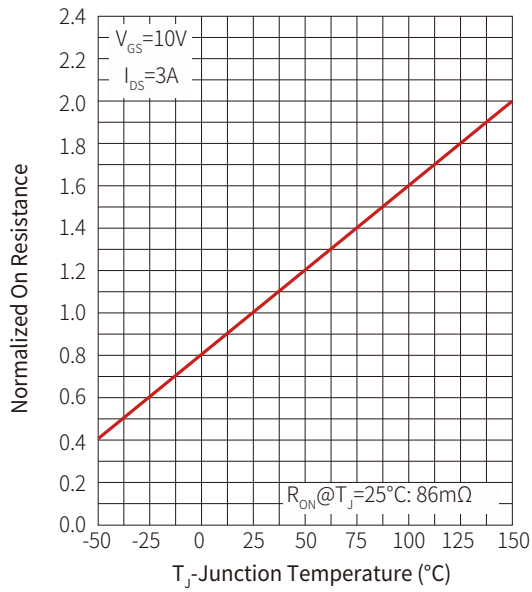


Figure 10: Diode Forward Current

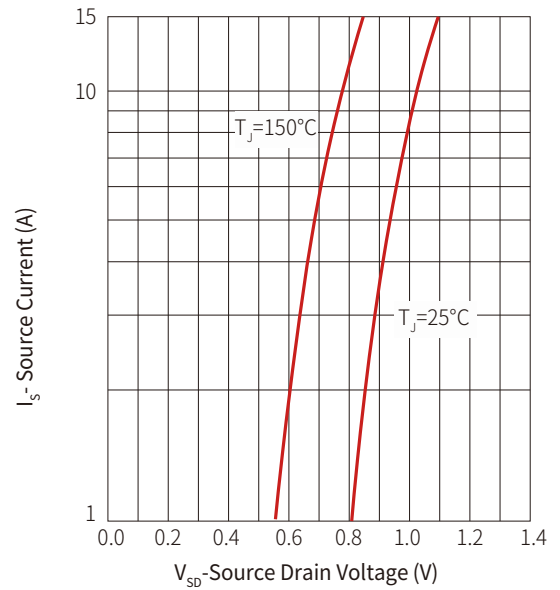


Figure 11: Capacitance

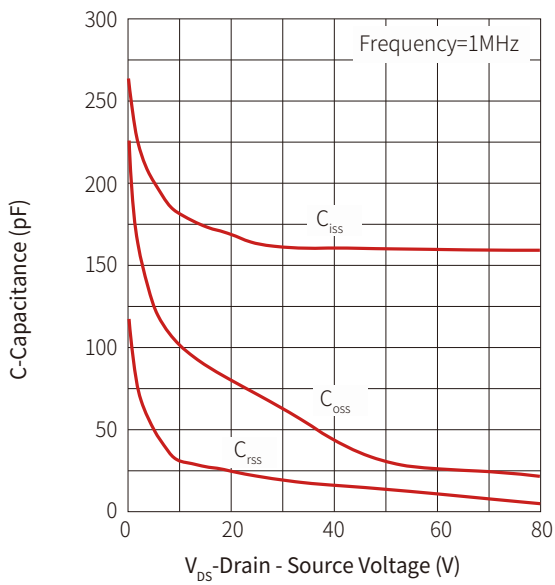
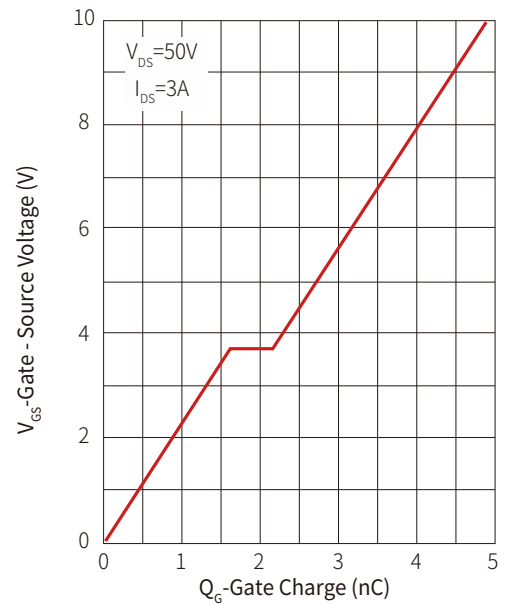
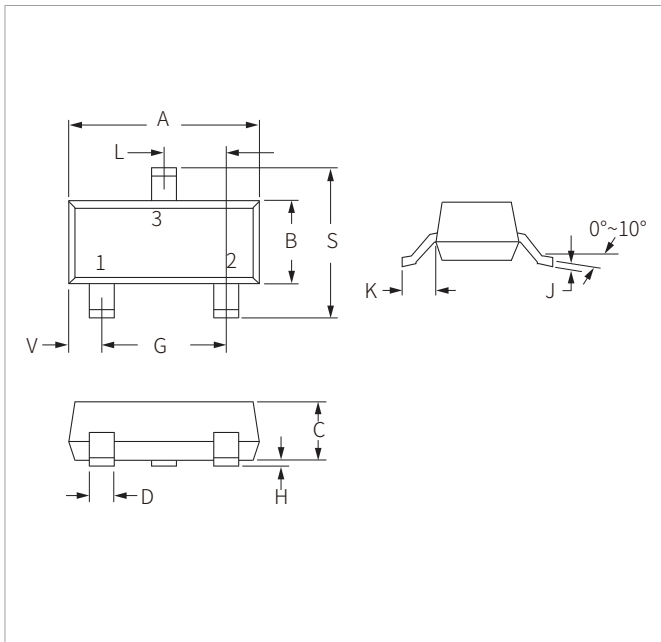


Figure 12: Gate Charge

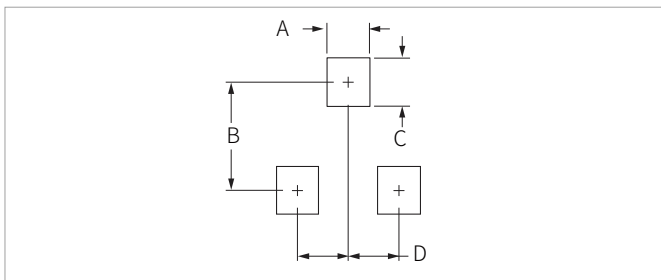


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM1003A	SOT-23	3000PCS	7"

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