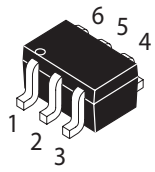
WEITRON

2N7002DW

Dual N-Channel MOSFET

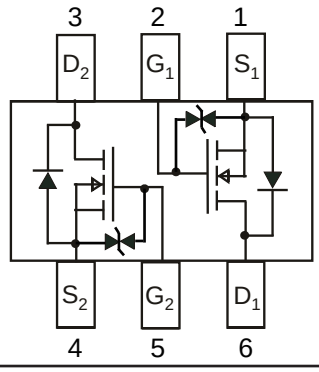
Lead(Pb)-Free



SOT-363(SC-88)

Features:

* We declare that the material of product are Halogen Free and compliance with RoHS requirements.
* ESD Protected:1000V



Maximum Ratings (TA=25°C Unless Otherwise Specified)

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Drain-Gate Voltage $R_{GS} \leq 1.0M\Omega$	V_{DGR}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current @Continuous(Tc=25°C)(Note 1) (Tc=100°C)(Note 1) @Pulsed(Note 2)	 I_D I_D I_{DM}	 ±115 ±75 ±800	mA
Power Dissipation Per Device FR–5 Board (Note 1) (TA=25°C) Derate Above 25°C	P_D	 380 250 3.0	 mW mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	326	°C/W
Operating Junction and Storage Temperature Range	T_J, Tstg	-55 to 150	°C

Device Marking

2N7002DW=702

Note 1: FR–5 = 1.0 x 0.75 x 0.062 in

Electrical Characteristics (T_A=25°C Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Static					
Drain-Source Breakdown Voltage V_{GS}=0V, I_D=10 uA	$V_{(BR)DSS}$	60	-	-	V
Gate-Threshold Voltage V_{DS}=V_{GS} , I_D=250uA	$V_{GS\ (th)}$	1.0	-	2.0	V
Gate-body Leakage V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±1	μA
Zero Gate Voltage Drain Current V_{DS}=60V, V_{GS}=0V @ Tc=25°C V_{DS}=60V, V_{GS}=0V @Tc=125°C	I_{DSS}	- -	- -	1.0 500	μA
On-State Drain Current V_{GS}=10V, V_{DS}≥2.0$V_{DS(ON)}$	$I_{D(on)}$	0.5	-	-	A
Drain-Source On-Resistance V_{GS}=5V, I_D=0.05A V_{GS}=10V, I_D=0.5A	$V_{DS(on)}$	-	-	0.375 3.75	V
Drain-Source On-Resistance V_{GS}=5V, I_D=0.05A @ Tj=25°C Tj =125°C V_{GS}=10V, I_D=0.5A @ Tj=25°C Tj =125°C	$R_{DS\ (on)}$	- - - -	- - - -	7.5 13.5 7.5 13.5	Ω
Forward Transconductance V_{DS} ≥2.0$V_{DS(ON)}$, I_D=0.2A	g_{fs}	80	-	-	mS
Dynamic					
Input Capacitance V_{DS}=25V, V_{GS}=0V, f=1MHZ	C_{iss}	-	-	50	PF
Output Capacitance V_{DS}=25V, V_{GS}=0V, f=1MHZ	C_{oss}	-	-	25	
Reverse Transfer Capacitance V_{DS}=25V, V_{GS}=0V, f=1MHZ	C_{rss}	-	-	5.0	
Switching					
Turn-On Time V_{DD}=25V, R_L=50Ω, I_D=0.5A V_{GEN}=10V, R_{GEN}=25Ω	$t_{d(on)}$	-	-	20	nS
Turn-Off Time V_{DD}=25V, R_L=50Ω, I_D=0.5A V_{GEN}=10V, R_{GEN}=25Ω	$t_{d(off)}$	-	-	40	nS
Body-Drain Diode Ratings					
Diode Forward On–Voltage (I_S=115 mAdc, V_{GS}= 0 V)	V_{SD}	–	–	–1.5	V
Source Current Continuous (Body Diode)	I_S	–	–	-115	mA
Source Current Pulsed	I_{SM}	–	–	–800	mA

2. Pulse Test: Pulse Width≤300μs, Duty Cycle 2.0%.

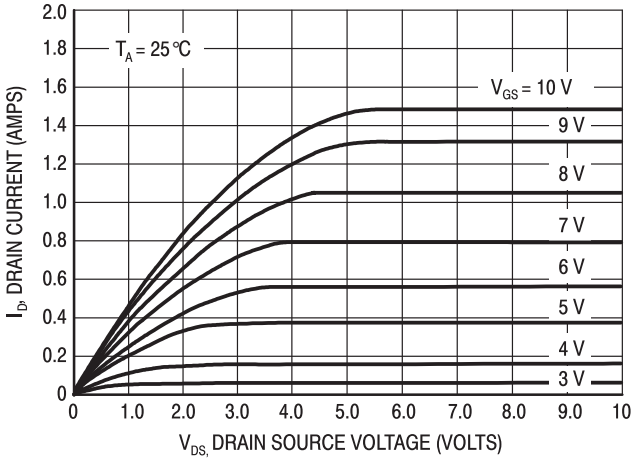


Figure 1. Ohmic Region

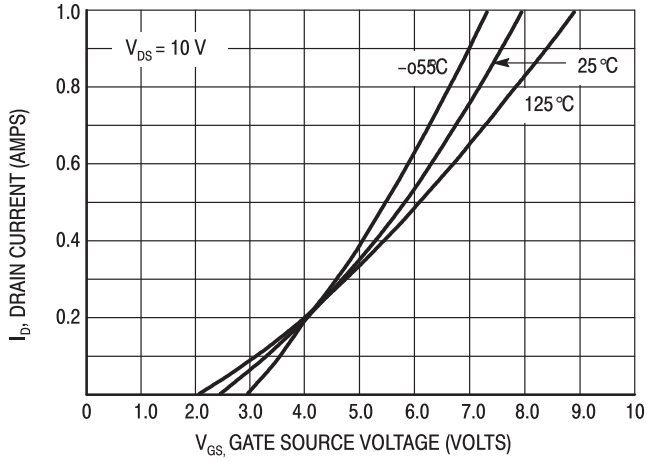


Figure 2. Transfer Characteristics

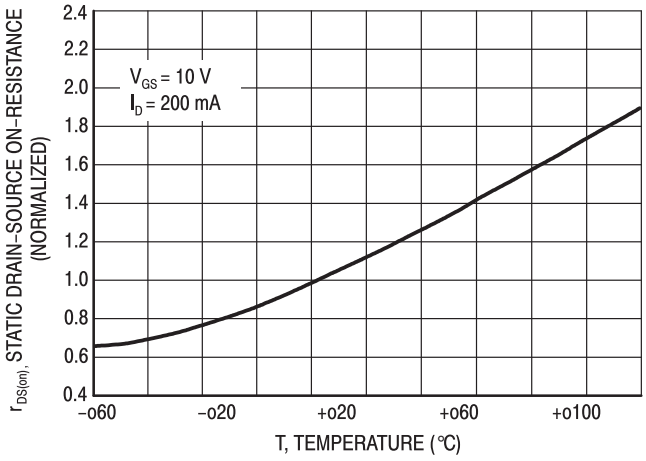


Figure 3. Temperature versus Static Drain–Source On–Resistance

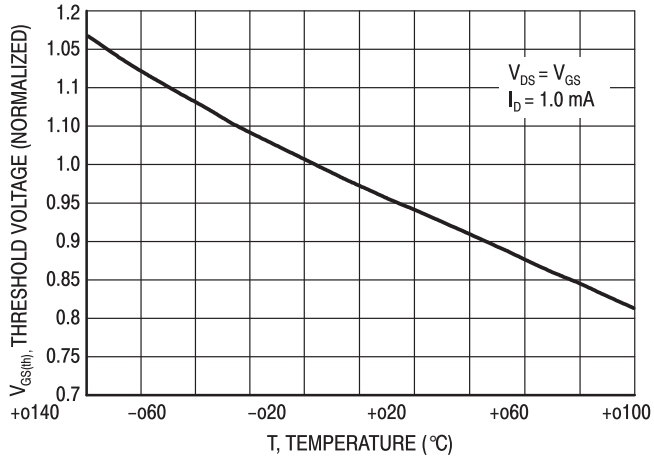
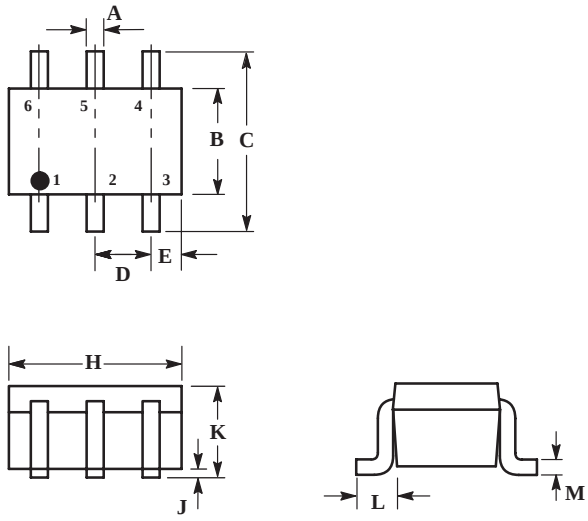


Figure 4. Temperature versus Gate Threshold Voltage

SOT-363 Outline Dimensions

Unit:mm



SOT-363		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 REF	
E	0.30	0.40
H	1.80	2.20
J	-	0.10
K	0.80	1.10
L	0.25	0.40
M	0.10	0.25