

**GENERAL DESCRIPTION**

The ME2N7002D is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching , and low in-line power loss are needed in a very small outline surface mount package.

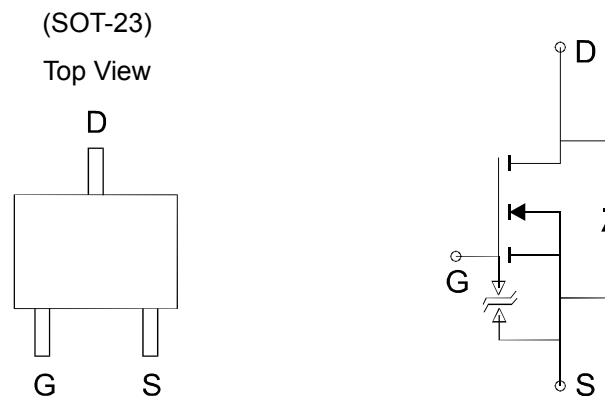
**FEATURES**

- Simple Drive Requirement
- Small Package Outline
- ROHS Compliant
- ESD Rating = 2000V HBM

**Mechanical data**

- High density cell design for low  $R_{DS(ON)}$
- Voltage controlled small signal switching.
- Rugged and reliable.
- High saturation current capability.
- High-speed switching.
- Not thermal runaway.
- The soldering temperature and time shall not exceed 260°C for more than 10 seconds.

**PIN CONFIGURATION**



**Absolute Maximum Ratings (TA=25°C Unless Otherwise Noted)**

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	300	mA
Pulsed Drain Current (Note 1)	$I_{DM}$	2000	mA
Maximum Power Dissipation	$P_D @T_A=25^\circ C$	0.35	W
	$P_D @T_A=75^\circ C$	0.21	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 ~ 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) (Note 2)	$R_{\theta JA}$	357	°C/W



### Electrical Characteristics (TA=25°C Unless Otherwise Specified)

Symbol	Parameter	Limit	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0, I <sub>D</sub> =10uA	60	-	-	V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	1.0	-	2.5	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =15V, I <sub>D</sub> =250mA	100	-	-	mS
I <sub>GSS</sub>	Gate Body Leakage	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V	-	-	±10	uA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V	-	-	1	uA
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA	-	-	3	Ω
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =200mA	-	-	4	
<b>Dynamic</b>						
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =200mA, V <sub>DS</sub> =15V V <sub>GS</sub> =4.5V	-	-	0.8	nC
T <sub>d(on)</sub>	Turn-on Time	V <sub>DD</sub> =30V, R <sub>L</sub> =150Ω, I <sub>D</sub> =200mA, V <sub>GEN</sub> =10V	-	-	20	nS
T <sub>d(off)</sub>	Turn-off Time	R <sub>G</sub> =10Ω	-	-	40	
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V	-	-	35	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> =25V	-	-	10	
C <sub>rss</sub>	Reverse Transfer Capacitance	f=1.0MHz	-	-	5	

### Source-Drain Diode

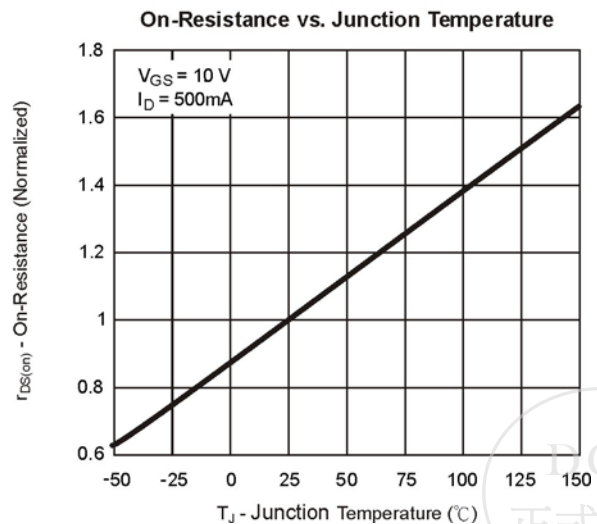
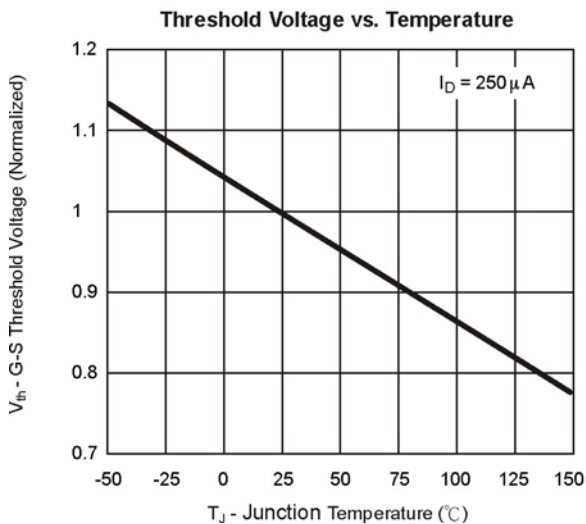
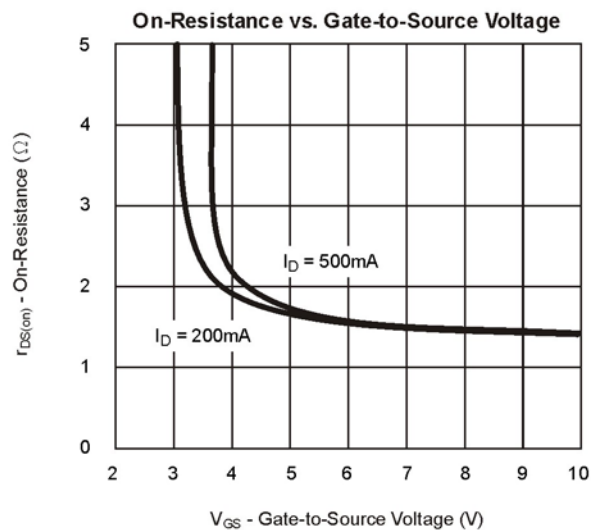
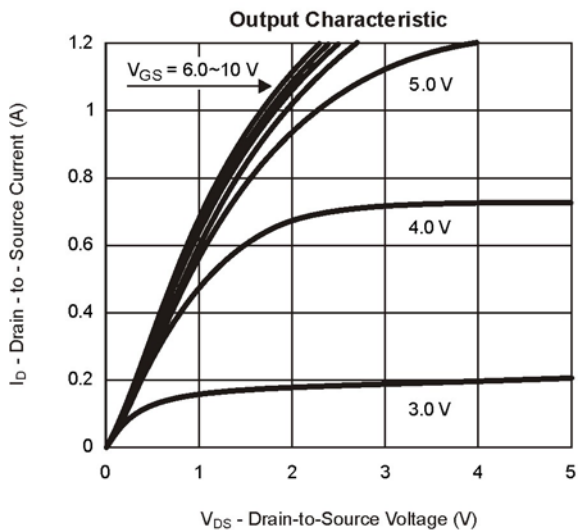
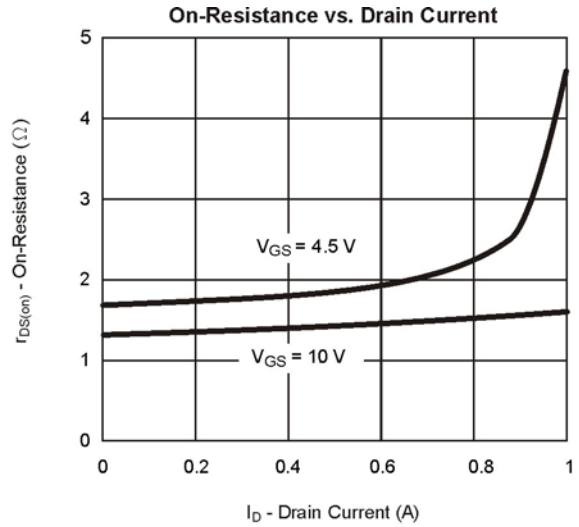
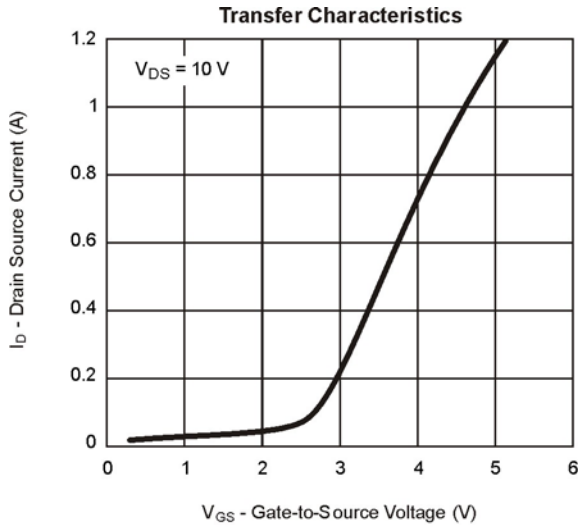
Symbol	Parameter	Limit	Min.	Typ.	Max.	Unit
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> =200mA, V <sub>GS</sub> =0V	-	0.82	1.3	V

#### Notes :

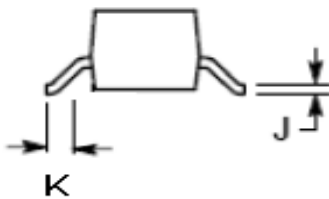
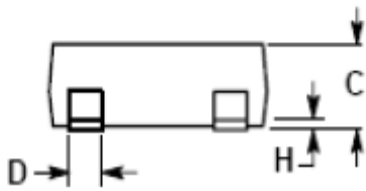
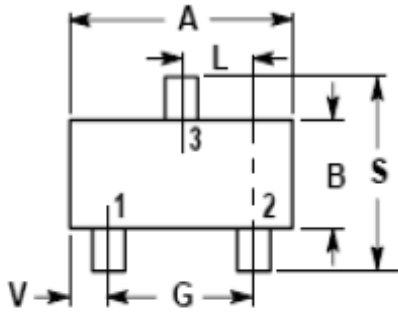
1. Maximum DC current limited by the package
2. Surface mounted on FR4 board, t ≤ 5sec.



## Typical Characteristics (T<sub>J</sub> = 25°C Noted)



**SOT-23 Package Outline**

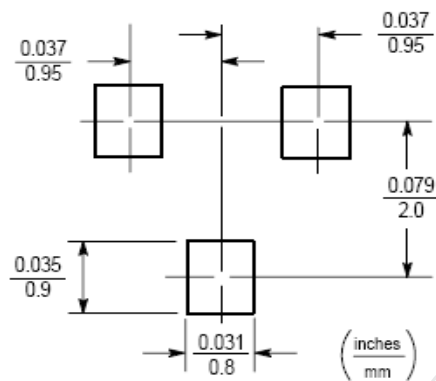


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.5
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.007	—	0.018	—
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

**SOLDERING FOOTPRINT\***

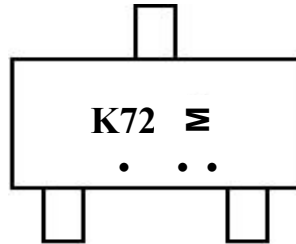


DCC  
正式發行

Device name:ME2N7002D

Package:SOT-23

Marking Code:



**K72: Device Marking Code**

**M: Date code**

### MONTH CODE

#### ODD YEARS(2007,2009)

<b>Jan</b>	1
<b>Feb</b>	2
<b>Mar</b>	3
<b>Apr</b>	4
<b>May</b>	5
<b>Jun</b>	6
<b>Jul</b>	7
<b>Aug</b>	8
<b>Sep</b>	9
<b>Oct</b>	T
<b>Nov</b>	V
<b>Dec</b>	C

#### EVEN YEARS(2006,2008)

<b>Jan</b>	E
<b>Feb</b>	F
<b>Mar</b>	H
<b>Apr</b>	J
<b>May</b>	K
<b>Jun</b>	L
<b>Jul</b>	N
<b>Aug</b>	P
<b>Sep</b>	U
<b>Oct</b>	X
<b>Nov</b>	Y
<b>Dec</b>	Z

DCC  
正式發行