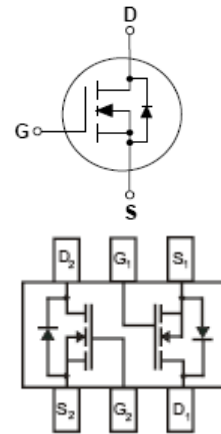
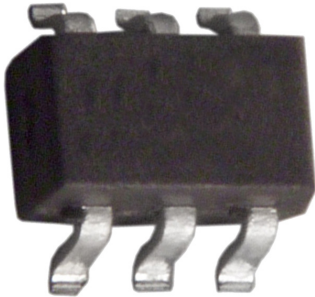


# N-Channel Enhancement Mode Field Effect Transistor



**SOT-363**

## Features:

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

## Applications:

- N-Channel Enhancement Mode Effect Transistor
- Switching Application

## Maximum Ratings:

Ratings at 25°C unless otherwise specified.

Parameter	Symbol	Value	Units
Drain-Source voltage	$V_{DS}$	60	V
Drain-Gate voltage ( $R_{GS} \leq 1M\Omega$ )	$V_{DGR}$	60	V
Gate -source voltage - continuous -Non Repetitive ( $t_p < 50\mu s$ )	$V_{GSS}$	$\pm 20$ $\pm 40$	V
Maximum drain current -continuous -Pulsed	$I_D$	115 800	mA
Power dissipation	$P_D$	200	mW
Thermal resistance, junction-to-ambient	$R_{\theta JA}$	625	°C/W
Junction and storage temperature	$T_J, T_{stg}$	-55 to +150	°C

# N-Channel Enhancement Mode Field Effect Transistor

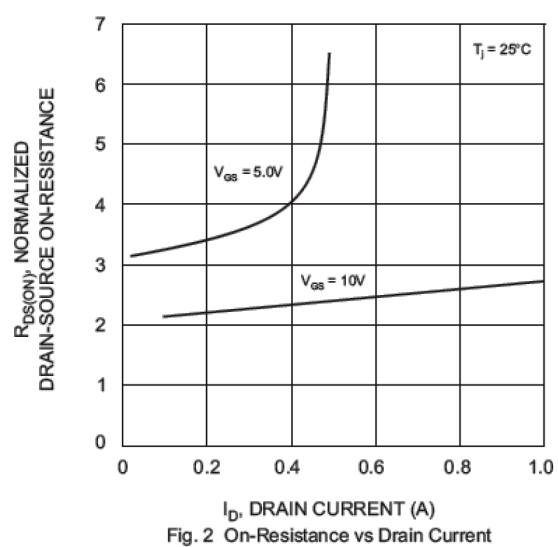
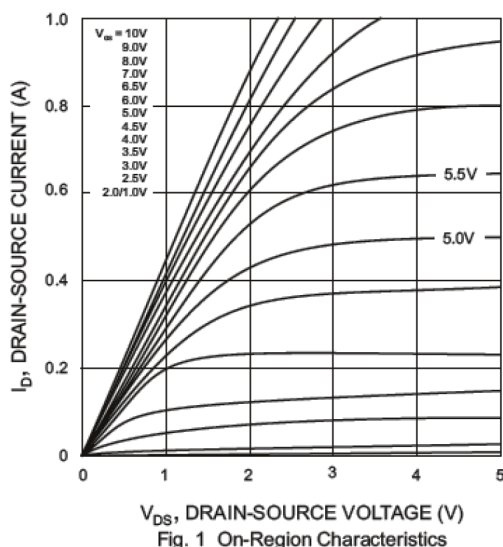
## Electrical Characteristics:

Ratings at 25°C unless otherwise specified

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	60	70	-	V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	-	2	
Gate-body leakage Forward Reverse	$I_{GSS}$	$V_{DS}=0V, V_{GS}=20V$ $V_{DS}=0V, V_{GS}=-20V$	-	-	100 -100	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$	-	-	1	$\mu A$
		$V_{DS}=60V, V_{GS}=0V, T_J=125^\circ C$	-	-	500	
On-state drain current	$I_{D(on)}$	$V_{GS}=10V, V_{DS}=7.5V$	0.5	1	-	A
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10V, I_D=500mA$	-	0.6	3.75	V
		$V_{GS}=5V, I_D=50mA$	-	0.09	1.5	
Forward transconductance	$g_{FS}$	$V_{DS}=10V, I_D=200mA$	80	-	-	mS
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS}=5V, I_D=50mA$	-	3.2	7.5	$\Omega$
		$V_{GS}=10V, I_D=500mA, T_J=125^\circ C$	-	4.4	13.5	
On-state drain current	$I_{D(on)}$	$V_{GS}=10V, V_{DS}=7.5V$	0.5	1	-	A
Drain-source diode forward voltage	$V_{SD}$	$V_{GS}=0V, I_D=115mA$	-	0.88	1.5	V
Input capacitance	$C_{ISS}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	-	20	50	pF
Output capacitance	$C_{OSS}$		-	11	25	
Reverse transfer capacitance	$C_{RSS}$		-	2	5	
Turn-on delay time	$t_{D(on)}$	$V_{DD} = 30V, I_D = 0.2A,$ $R_L = 150\Omega, V_{GS} = 10V, R_{GEN} = 25\Omega$	-	7	20	ns
Turn-off delay time	$t_{D(off)}$		-	11	20	ns

## Typical Characteristics:

$T_A = 25^\circ C$  unless otherwise specified



# N-Channel Enhancement Mode Field Effect Transistor

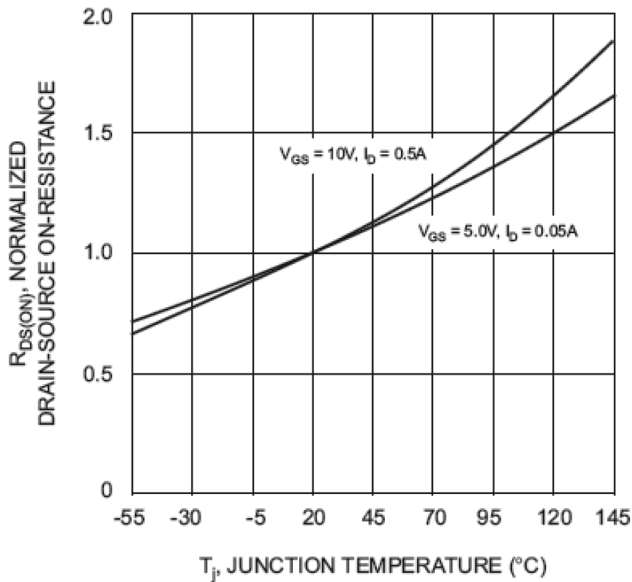


Fig. 3 On-Resistance vs Junction Temperature

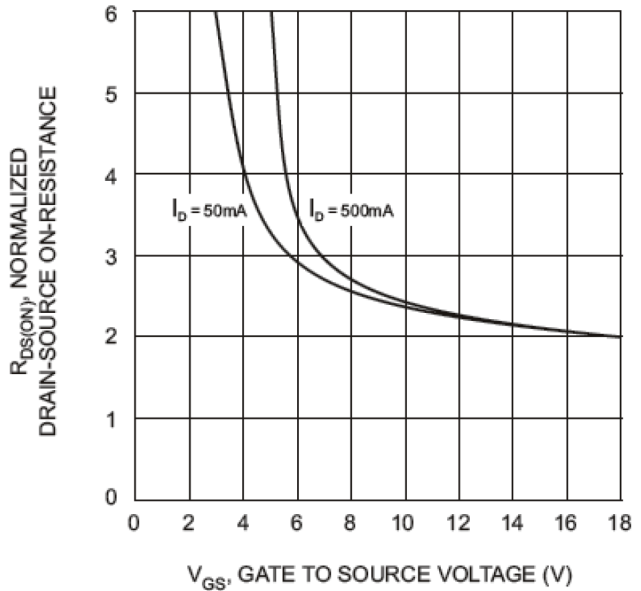
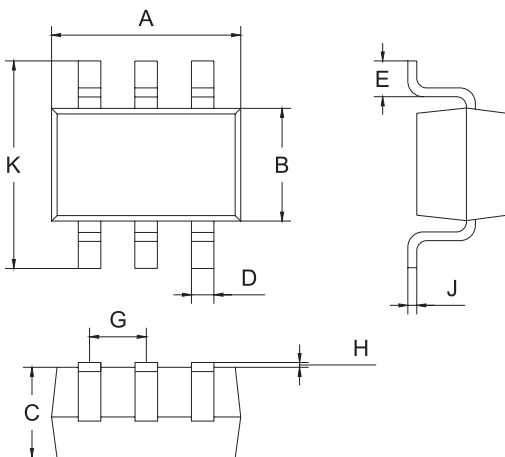


Fig. 4 On-Resistance vs. Gate-Source Voltage

## Package Outline:

Plastic surface mounted package

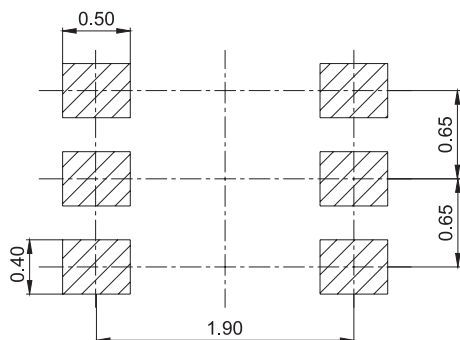


SOT-363		
Dim.	Min.	Max.
A	2	2.2
B	1.15	1.35
C	0.95 Typ.	
D	0.25 Typ.	
E	0.25	0.4
G	0.6	0.7
H	0.02	0.1
J	0.1 Typ.	
K	2.2	2.4

Dimensions : Millimetres

# N-Channel Enhancement Mode Field Effect Transistor

## Soldering Footprint:



Dimensions : Millimetres

## Package Information:

Device	Package	Shipping
2N7002DW-TR	SOT-363	3,000 / Tape & Reel

## Part Number Table

Description	Part Number
N-Channel Enhancement Mode Field Effect Transistor	2N7002DW-TR

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