N-CHANNEL TRANSISTOR

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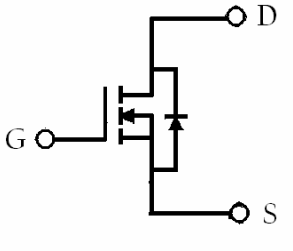
2N7002

Description

The MTN7002N2 is a N-channel enhancement-mode MOS transistor.

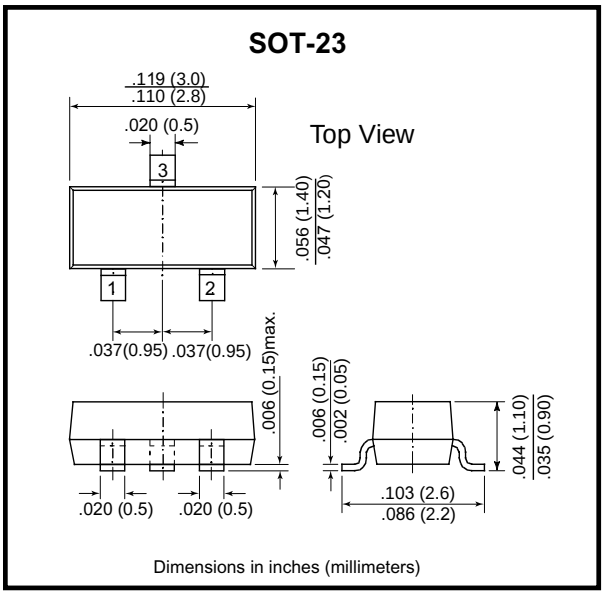
Equivalent Circuit



G：Gate

S：Sourse

D：Drain



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits		Unit
Drain-Sourse Voltage	BV_{DSS}	60		V
Drain-Gate Voltage (RGS=1MΩ)	BV_{DSS}	60		V
Gate-Source Voltage	V_{GS}	+/-40		V
Continuous Drain Current (Ta=25°C)	ID	200	*1	mA
Continuous Drain Current (Ta=100°C)	ID	115	*1	mA
Pulsed Drain Current (Ta=25°C)	ID	800	*2	mA
Total Power Dissipation (Ta=25°C)	Pd	200		mW
DERATE Above 25°C		0.16		mW/°C
Operating Junction Temperature	Tj	-55~+150		°C
Storage Temperature	Tstg	-55~+150		°C
Thermal Resistance, Junction-to-Ambient		625		°C/W
Lead Temperature, for 10 second Soldering		260		°C

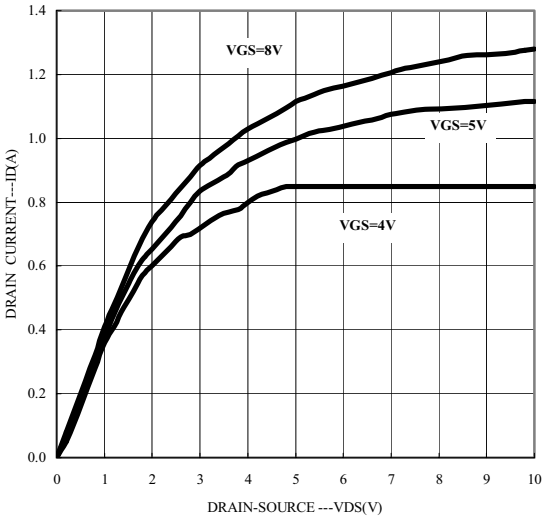
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVDSS	60	-	-	V	VGS=0, ID=10uA
VGS(th)	1	-	2.5	V	VDS=2.5V, ID=0.25mA
IGSS/F	-	-	100	nA	VGS=+20V, VDS=0
IGSS/R	-	-	100	nA	VGS=-20V, VDS=0
IDSS	-	-	1	uA	VDS=60V, VGS=0
ID(ON)	500	-	-	mA	VDS>2VDS(ON), VGS=10V
VDS(ON)	-	-	0.375	V	ID=50mA, VGS=5V
	-	-	3.75	V	ID=500mA, VGS=10V
RDS(ON)	-	-	7.5	Ω	ID=50mA, VGS=5V
	-	-	7.5		ID=500mA, VGS=10V
GFS	80	-	-	mS	VDS>2VDS(ON), ID=200mA
Ciss	-	-	50	pF	VDS=25V, VGS=0, f=1MHz
Coss	-	-	25		
Crss	-	-	5		

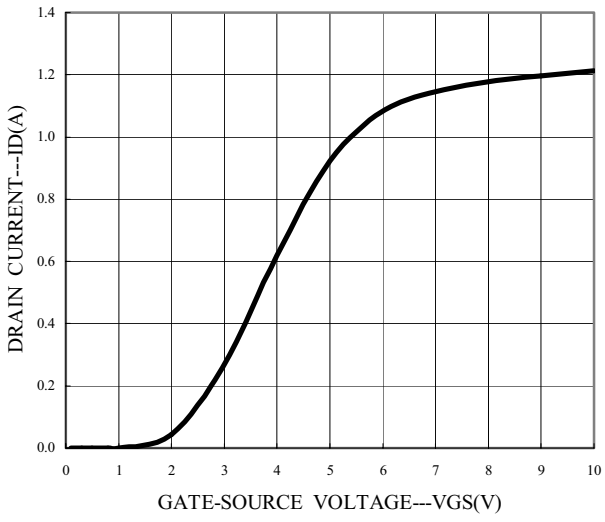
*Pulse Test : Pulse Width ≤380us, Duty Cycle≤2%

Characteristic Curves

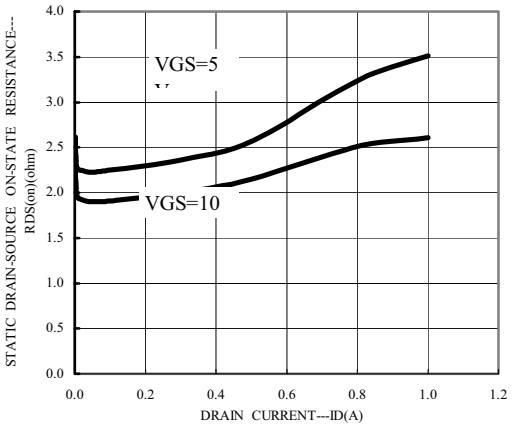
TYPICAL OUTPUT CHARACTERISICS



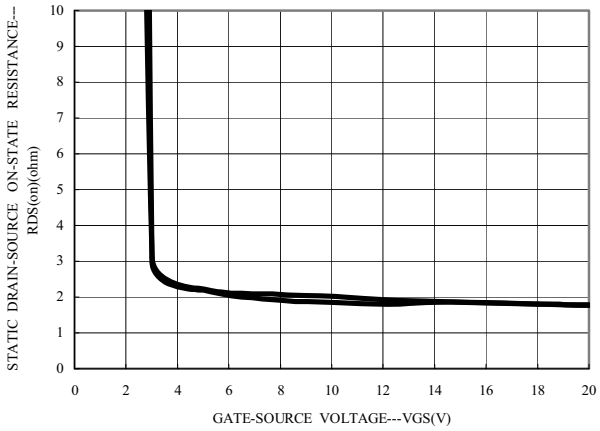
TYTICAL TRANSFER CHARACTERISTIC



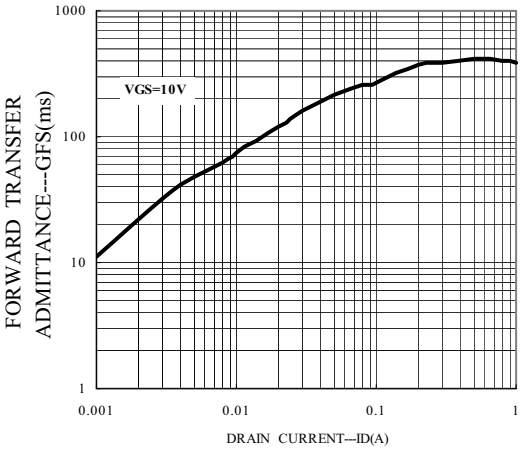
STATIC DRAIN-SOURCE ON-STATE RESISTANCE vs DRAIN CURRENT



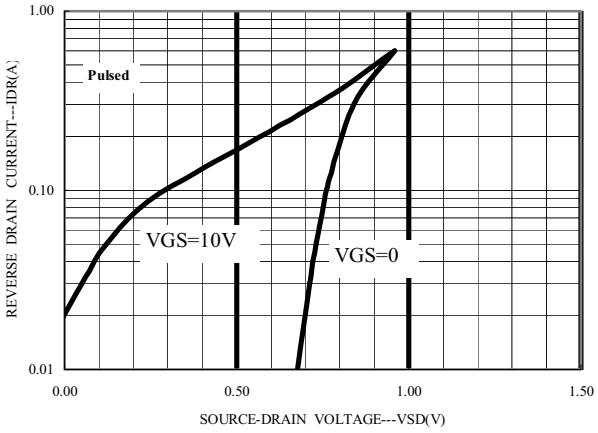
STATIC DRAIN-SOURCE ON-STATE RESISTANCE VS GATE-SOURCE VOLTSAGE



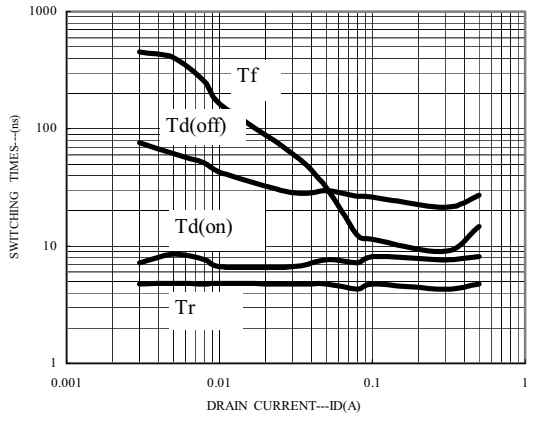
FORWARD TRANSFER ADMITTANCE vs DRAIN CURRENT



REVERSE DRAIN CURRENT vs SOURCE-DRAIN VOLTAGE



SWITCHING CHARACTERISTICS



PD - Ta