

SPN7002D

DESCRIPTION

The SPN7002D is the Dual N-Channel enhancement mode field effect transistors are produced using high cell density DMOS technology. These products have been designed to minimize on-state resistance while provide rugged, reliable, and fast switching performance. They can be used in most applications requiring up to 300mA DC and can deliver pulsed currents up to 1.0A. These products are particularly suited for low voltage, low current applications such as small servo motor control, power MOSFET gate drivers, and other switching applications.

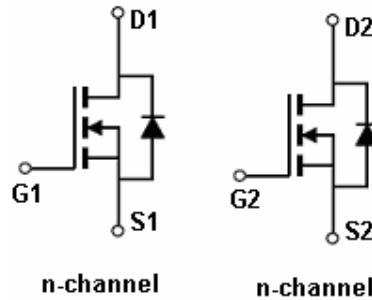
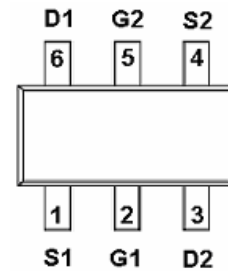
FEATURES

- ◆ 60V/0.50A , $R_{DS(ON)} = 5.0\Omega @ V_{GS} = 10V$
- ◆ 60V/0.30A , $R_{DS(ON)} = 5.5\Omega @ V_{GS} = 5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-363 package design

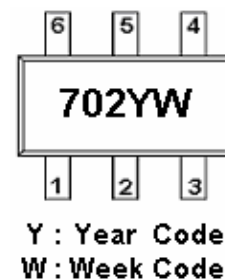
APPLICATIONS

- Drivers: Relays, Solenoids, Lamps, Hammers, Display, Memories, Transistors, etc.
- High saturation current capability. Direct Logic-Level Interface: TTL/CMOS
- Battery Operated Systems
- Solid-State Relays

PIN CONFIGURATION (SOT-363 / SC-70-6L)



PART MARKING



SPN7002D

PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN7002DS36RG	SOT-363	702YW

※ Week Code : A ~ Z (1 ~ 26) ; a ~ z (27 ~ 52)

※ SPN7002DS36RG : Tape Reel ; Pb – Free

ABSOLUTE MAXIMUM RATINGS (TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V _{DSS}	60	V
Gate –Source Voltage - Continuous	V _{GSS}	±20	V
Gate –Source Voltage - Non Repetitive (t _p < 50μs)	V _{GSS}	±40	V
Continuous Drain Current(T _J =150°C)	I _D	0.5	A
Pulsed Drain Current (*)	I _{DM}	1.0	A
Continuous Source Current(Diode Conduction)	I _S	0.25	A
Power Dissipation	P _D	0.35	W
Operating Junction Temperature	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	375	°C/W

(*) Pulse width limited by safe operating area

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ELECTRICAL CHARACTERISTICS (T_A=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.7	2.5	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
		V _{DS} =60V, V _{GS} =0V T _J =125°C			10	
Drain-Source On-Resistance	R _{DSON}	V _{GS} =10V, I _D =0.50A		3.5	5.0	Ω
		V _{GS} = 5V, I _D =0.30A		4.0	5.5	
		V _{GS} = 4.5V, I _D =0.05A		3.7	5.5	
Source-drain Current	I _{SD}				0.35	A
Source-drain Current (pulsed)	I _{SDM} (2)				1.4	A
Forward Transconductance	G _{fs} (1)	V _{DS} = 10 V, I _D = 0.5 A		0.6		S
Diode Forward Voltage	V _{SD} (1)	V _{GS} = 0 V, I _S = 0.12A		0.85	1.5	V
Dynamic						
Total Gate Charge	Q _g	V _{DD} = 30 V, I _D = 1 A, V _{GS} = 5 V		1.4	2.0	nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			0.5		
Input Capacitance	C _{iss}	V _{DS} = 25 V, f = 1 MHz, V _{GS} = 0		43		pF
Output Capacitance	C _{oss}			20		
Reverse Transfer Capacitance	C _{rss}			6		
Turn-On Time	t _{d(on)}	V _{DD} = 30 V, I _D = 0.5 A R _G = 4.7Ω V _{GS} = 4.5 V		5		ns
	t _r			15		
Turn-Off Time	t _{d(off)}			7		
	t _f			8		

(1) Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %.

(2) Pulse width limited by safe operating area.