

Descriptions

Double N-CHANNEL MOSFET in a SOT-363 Plastic Package.

Features

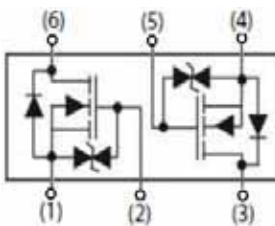
Sensitive gate trigger current and Low Holding current.ESD protected diode.

ESD rating:2200V HBM

Applications

Intended for use in general purpose switching and phase control applications.

Equivalent Circuit



Pinning



PIN1、 4 : S

PIN 2、 5 : G

PIN 3、 6 : D

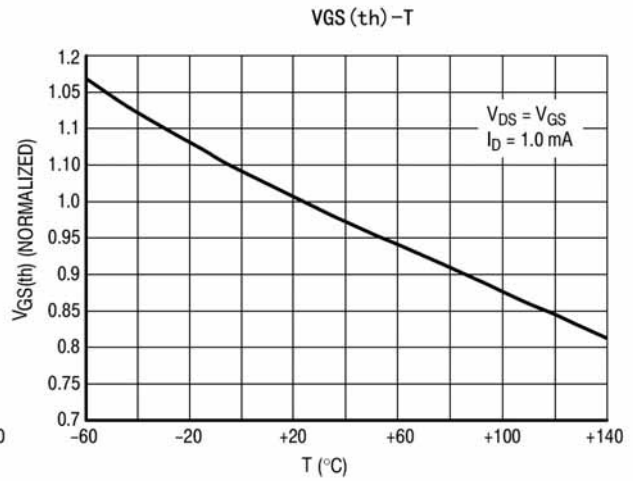
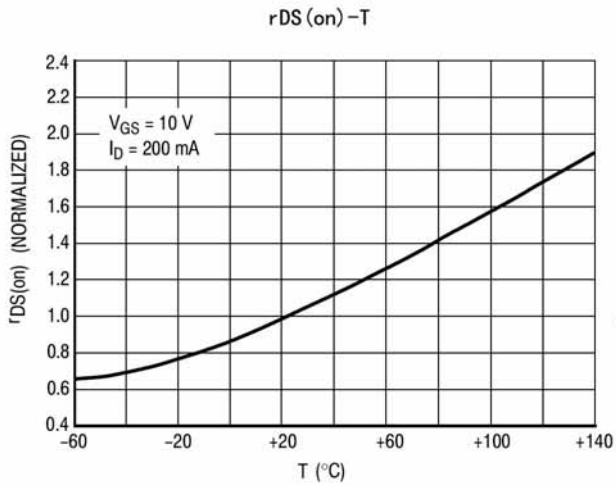
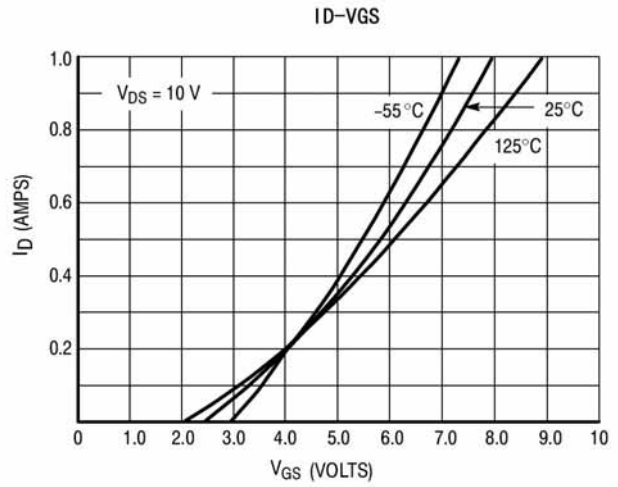
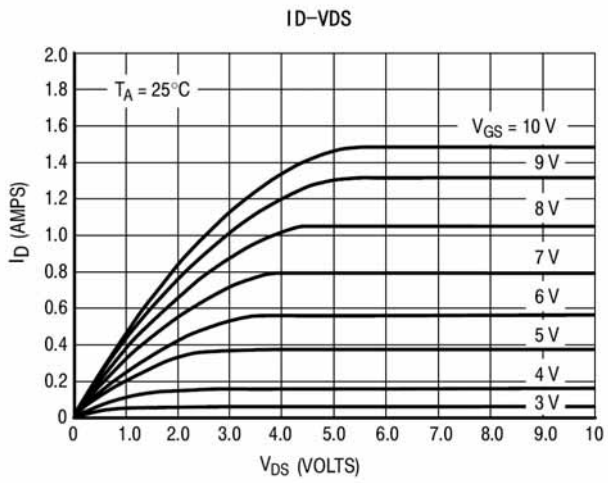
Absolute Maximum Ratings(Ta=25 °C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGR}	60	V
Maximum Drain Current - Continuous	I_D	250	mA
Maximum Drain Current - Pulsed	I_{DM}	800	mA
Gate-Source Voltage - Continuous	V_{GSS}	±20	V
Maximum Power Dissipation	P_D	350	mW
Storage Temperature Range	T_{stg}	-55~150	°C

Electrical Characteristics(Ta=25 °C)

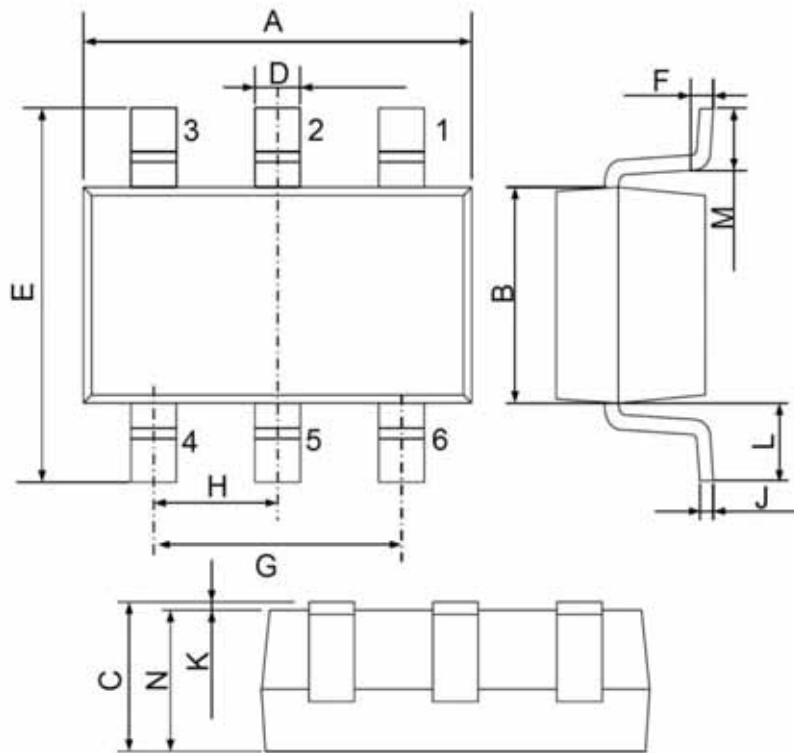
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0$ $I_D=10\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$ $T_J=25^\circ C$			1.0	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$ $T_J=125^\circ C$			500	μA
Gate - Body Leakage	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			±10	nA
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=5V$ $I_D=0.05A$		1.5	5	Ω
	$R_{DS(on)(2)}$	$V_{GS}=10V$ $I_D=0.5A$		1.3	5	Ω
Forward Transconductance	g_{FS}	$V_{DS}=10V$ $I_D=0.2A$	80			mS
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=250mA$			1.5	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0		1.9	V
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 2.0V_{DS(on)}$ $V_{GS}=10V$	500			mA
Drain-Source On-Voltage	$V_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=500mA$			2.5	V
	$V_{DS(on)(2)}$	$V_{GS}=5.0V$ $I_D=50mA$			0.27 5	V
Turn-On Time	$t_{d(on)}$	$V_{DD}=30V$ $I_D=200mA$ $R_G=25\Omega$		7.5	20	ns
Turn-Off Time	$t_{d(off)}$	$R_L=150\Omega$ $V_{gen}=10V$		11	20	ns

RATING AND CHARACTERISTICS CURVES (2N7002DS6)



Package Dimensions

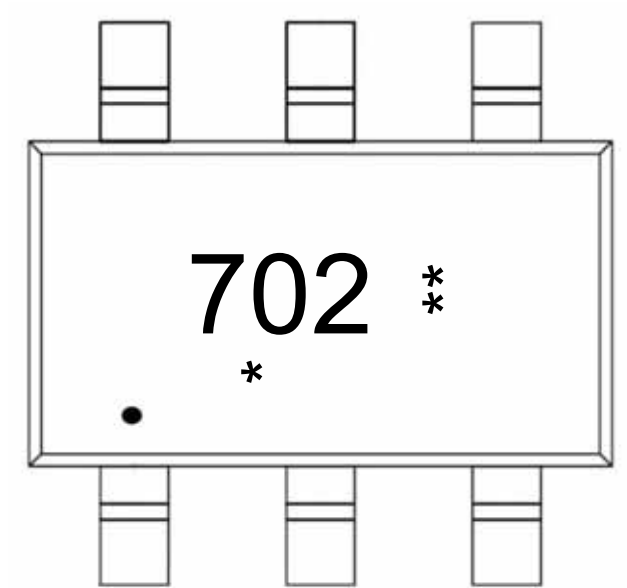
SOT-363-6L



UNIT: mm

DIM	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	2.15	2.45
F	0.20 Typ.	
G	1.20	1.40
H	0.65 Typ.	
J	0.08	0.15
K	0.00	0.10
L	0.525 Ref.	
M	0.26	0.46
N	0.90	1.00

Marking Instructions



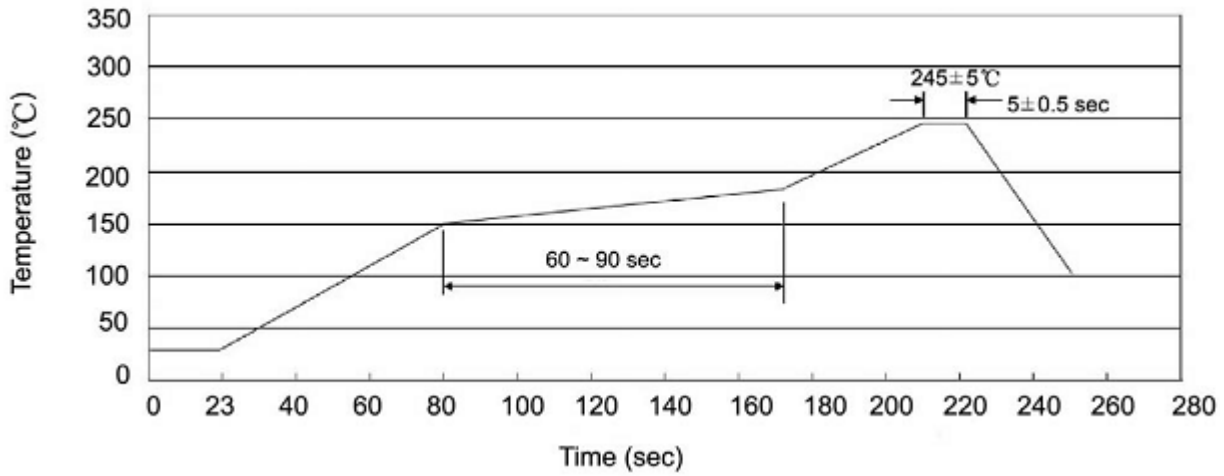
Note:

● : "1" Pin

702 : Product Type Code

***: Lot No. Code, code change with Lot No.

Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1.Preheating:25~150 °C, Time:60~90sec.
- 2.Peak Temp.:245 ± 5°C, Duration:5 ± 0.5sec.
- 3.Cooling Speed: 2~10°C/sec.

Resistance to Soldering Heat Test Conditions

Temp.:260±5 °C Time:10±1 sec

Packaging SPEC.

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-363	3,000	10	30,000	8	240,000	7" x8	180×120×180	385×257×392

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