增 益 实 业

零 件 承 认 书

SPECIFICATION FOR APPROVAL

客户名称：

客户料号：

增益料号：144-L2N70020R00

规格描述：MOS管/SMD/L2N7002M3T5G/SOT-723D/ROHS/MD

日　　期：2022/6/19

版　　本：A

增益签核：

制订	审核	核准
张翔	刘业明	柯文学

客户签核：

工程	审核	核准

东莞市增益实业有限公司
地址：东莞市塘厦镇林村塘厦大道北552号
电话：0769-87321000
传真：0769-87891229

物料类型：	MOS管
日　　期：	2022/6/19
版　　本：	A

图 面 规 格 变 更 履 历 表

客户			料号		品名	
客户版本	增益版本	变更内容	日期	制定	审核	核准
	A	初版	2022/6/19	张翔	刘业明	柯文学

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PANJIT SEMI CONDUCTOR

1N4001-1N4007

PLASTIC SILICON RECTIFIERS

VOLTAGE 50 to 1000 Volts **CURRENT** 1.0 Amperes

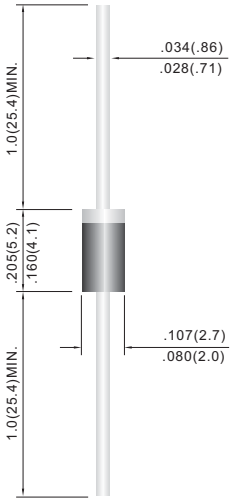
FEATURES

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Exceeds environmental standards of MIL-S-19500/228
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

- Case: DO-41 Molded plastic
- Epoxy: UL 94V-O rate flame retardant.
- Lead: Axial leads, solderable per MIL-STD-750,Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.012 ounces, 0.30 gram

DO-41 Unit: inch(mm)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load,derate current by 20%.

PARAMETER	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Current .375"(9.5mm) lead length at T_A=75°C	$I_{F(AV)}$	1.0							A
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30							A
Maximum Forward Voltage at 1.0A	V_F	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J=25°C T_J=100°C	I_R	5.0 500							µA
Typical Junction Capacitance (Note 1)	C_J	15							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	110 40 35							°C / W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150							°C

NOTES:

1. Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
2. Thermal Resistance from Junction to Ambient and from junction to lead at 0.375”(9.5mm)lead length P.C.B.mounted.

1N4001-1N4007

RATING AND CHARACTERISTIC CURVES

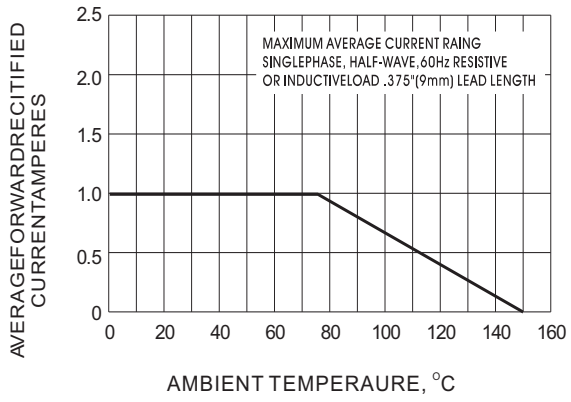


Fig.1-FORWARD CURRENT DERATING CURVE

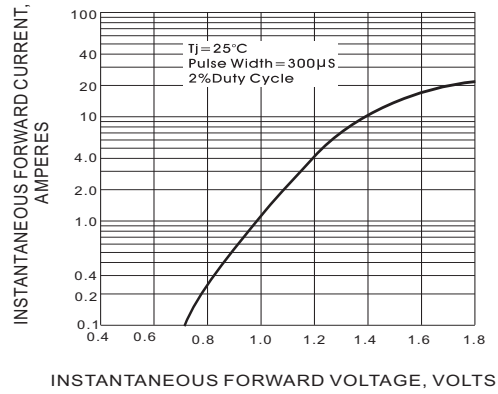


Fig.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

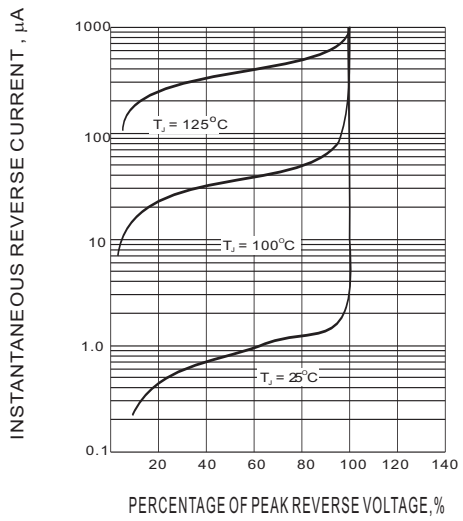


Fig.3-TYPICAL REVERSE CHARACTERISTIC

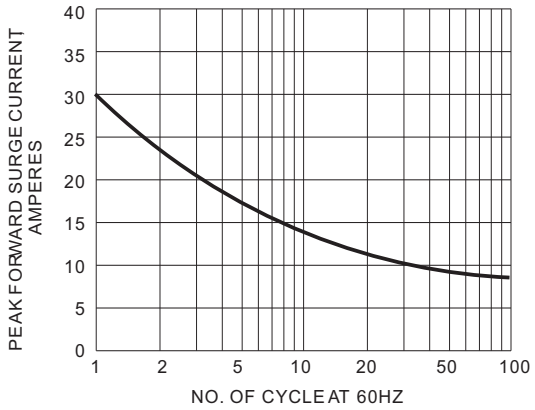


Fig.4-MAXIMUMNON-REPETITIVE SURGE CURRENT

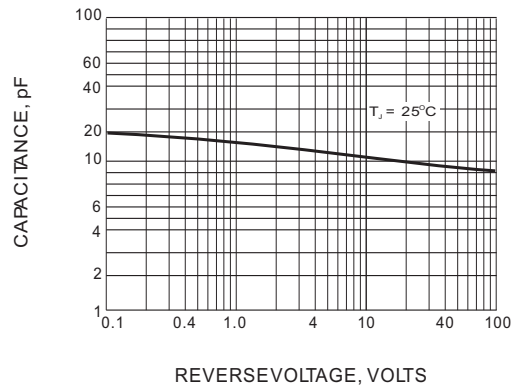


Fig.5-TYPICAL JUNCTION CAPACITANCE

2N7002KM

60V N-Channel Enhancement Mode MOSFET

VOLTAGE	60 Volt	CURRENT	0.34 A

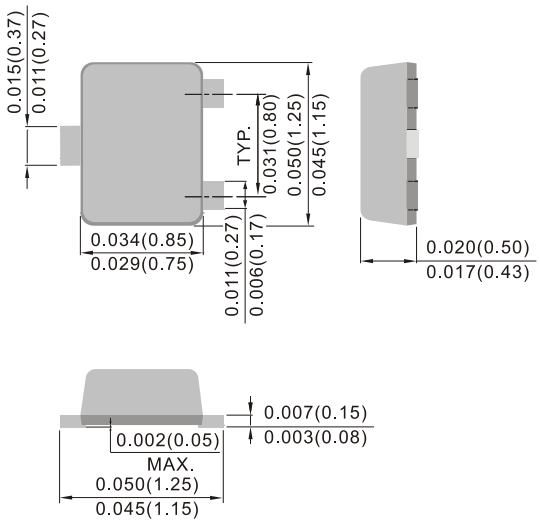
FEATURES

- Epoxy meets UL 94 V-0 flammability rating
- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- High Saturation Current Capability
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 Std. (Halogen Free)

MECHANICAL DATA

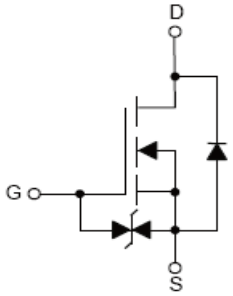
- Case: SOT-723 Package
- Terminals: Solderable per MIL-STD-750,Method 2026
- Marking Code：RK

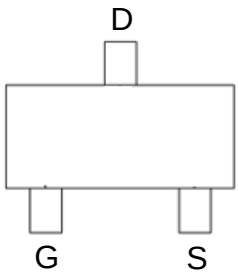
SOT- 723 Unit : inch(mm)



MAXIMUM RATINGS （Ta = 25 ℃）

Parameter	Symbol	Value	Units
Drain-source Voltage	V_{DS}	60	V
Gate-source-Voltage	V_{GS}	±20	V
Drain Current	I_D	0.34	A
Total Power Dissipation	P_D	0.15	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 to 150	℃
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	℃/W





G:GATE
S :SOURCE
D:DRAIN

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ELECTRICAL CHARACTERISTICS （Ta = 25 ℃）

Parameter	Test Conditions	Symbol	Min	TYP.	Max	Units
Drain-source BreakdownVoltage	V_{GS}=0V,I_D=250uA	$V_{(BR)Dss}$	60			V
Gate-Threshold Voltage	V_{DS}=V_{GS},I_D=250uA	$V_{GS(th)}$	1.0	1.4	2.5	V
Gate –body Leakage Current	V_{DS}=0V,V_{GS}=±20V	I_{GSS}			±10	uA
	V_{DS}=0V,V_{GS}=±10V				±200	nA
	V_{DS}=0V,V_{GS}=±5V				±100	nA
Zero Gate Voltage DrainCurrent	V_{DS}=48V,V_{GS}=0V	I_{DSS}			1	uA
Drain-source On-resistance	V_{GS}=10V,I_D=500mA	$R_{DS(ON)}$		1.3	4	Ω
	V_{GS}=10V,I_D=500mA			1.4	4.5	
Recovered Charge	V_{GS}=0V,I_S=300mA,V_R=25V, dI/dt=-100A/us	Qr		30		Nc
Dynamic Characteristics						
Input Capacitance	V_{DS}=10V V_{GS}=0V f=1MHz	C_{iss}			40	pF
Output Capacitance		C_{oss}			30	
Reverse Transfer Capacitance		C_{rss}			10	
Switching Characteristics						
Turn-on delay time	V_{DD}=25V, V_{GS}=10V, R_L=250 Ω, R_{GS}=50K, R_{GEN}=25Ω	$t_{d(on)}$			10	ns
Turn-off delay time		$t_{d(off)}$			15	
Reverse Recovery Time	V_{GS}=0V,I_S=300mA,V_R=25V, dI/dt=-100A/us	t_{rr}		30		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{GS}=0V,Is=200mA	V_{SD}		0.97	1.5	V

2N7002KM

RATING AND CHARACTERISTIC CURVES

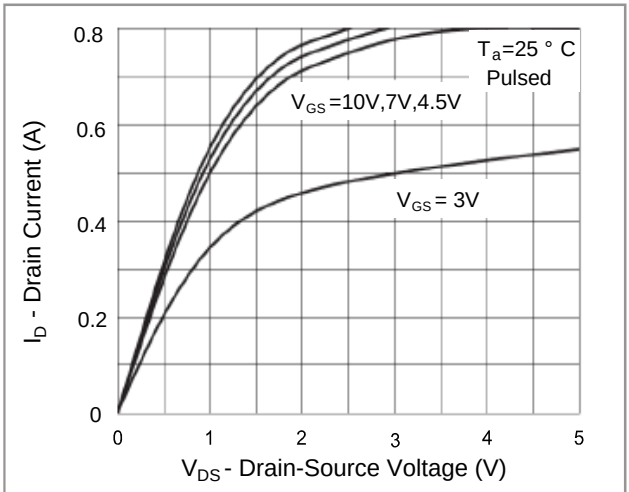

Fig.1 Output Characteristics

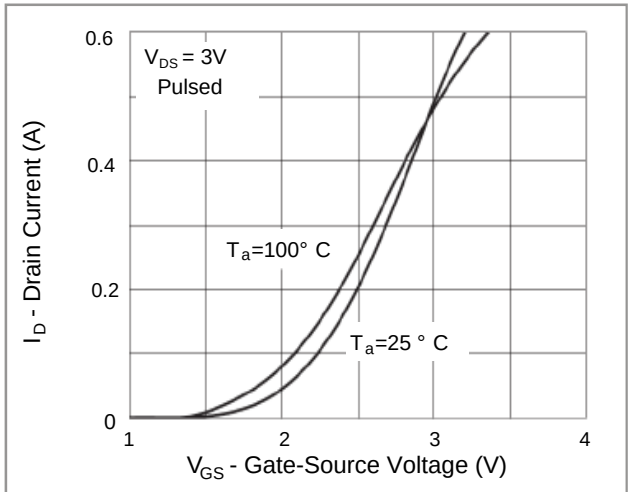

Fig.2 Transfer Characteristics

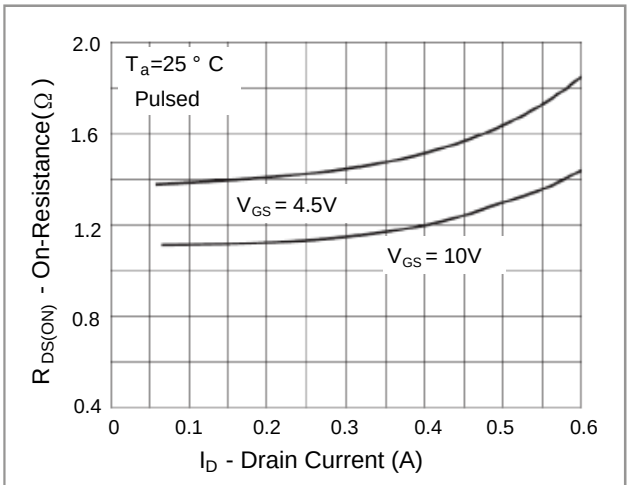

Fig.3 Drain-Source On-Resistance

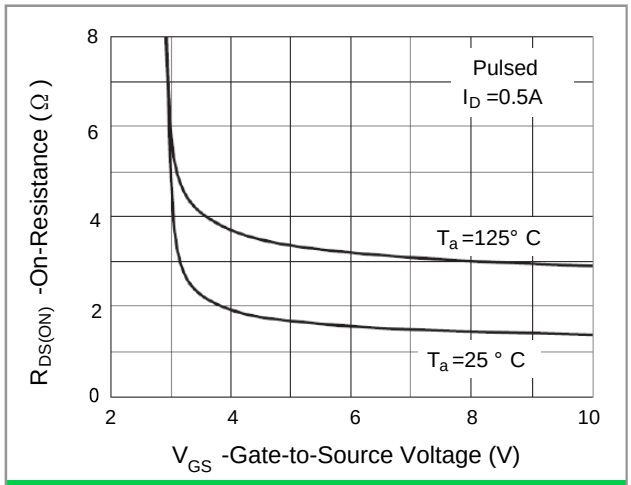

Fig.4 On Resistance VS Gate to Source Voltage

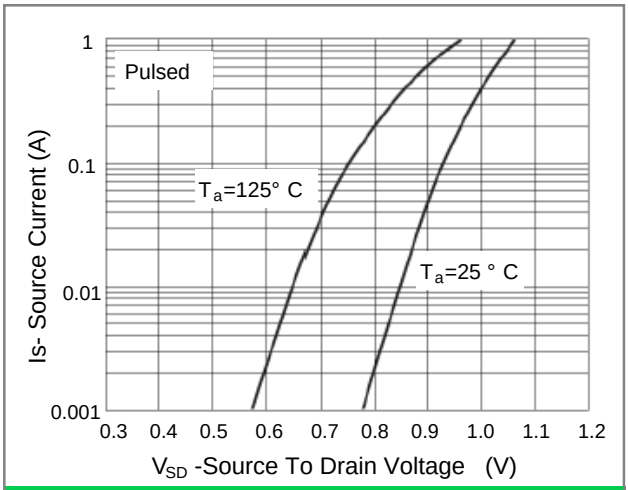

Fig.5 Source- Drain Diode Forward

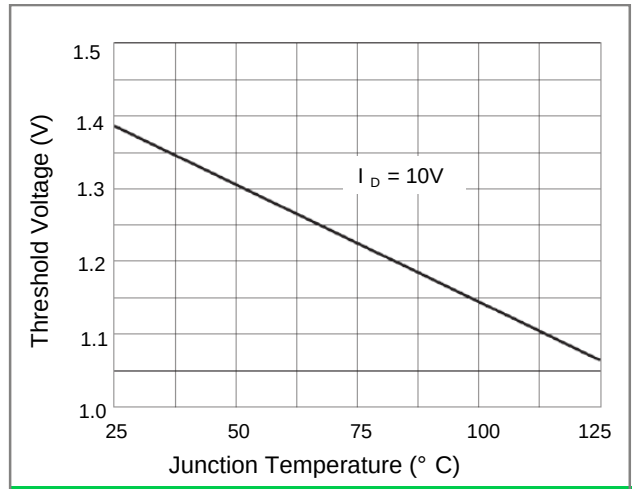

Fig.6 Threshold Voltage