



# PJV1704

## 20V N-Channel MOSFET

**Voltage**

**20 V**

**Current**

**0.5 A**

### Features

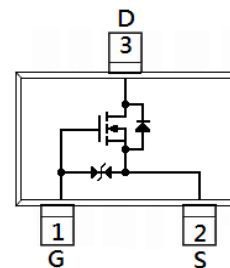
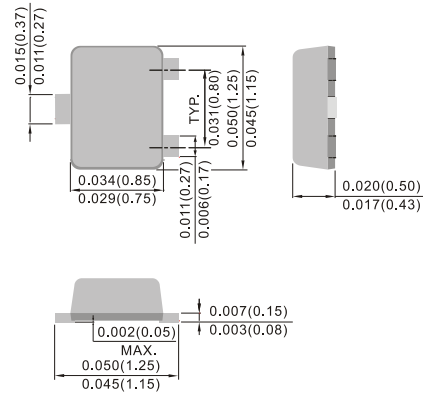
- Switching with Low RDS(ON)
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : SOT-723 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.00005 ounces, 0.0013 grams

**SOT-723**

**Unit : inch(mm)**



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS	
Drain-Source Voltage	V <sub>DS</sub>	20	V	
Gate-Source Voltage	V <sub>GS</sub>	±10		
Continuous Drain Current	I <sub>D</sub>	0.5	A	
Pulsed Drain Current <sup>(Note 2)</sup>	I <sub>DM</sub>	1.0		
Power Dissipation	P <sub>D</sub>	T <sub>a</sub> =25°C	150	mW
		Derate above 25°C	1.2	mW/°C
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C	
Typical Thermal Resistance	R <sub>θJA</sub>	833	°C/W	
- Junction to Ambient <sup>(Note 3)</sup>				



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## Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>Static</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.7	1.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.0V, I_D=0.3A$	-	0.35	0.5	$\Omega$
		$V_{GS}=2.5V, I_D=0.2A$	-	0.45	0.7	
		$V_{GS}=1.8V, I_D=0.15A$	-	0.57	0.9	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V, V_{DS}=0V$	-	-	$\pm 10$	
Diode Forward Voltage	$V_{SD}$	$I_S=0.1A, V_{GS}=0V$		0.77	1.2	V
<b>Dynamic</b> (Note 5)						
Input Capacitance	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V,$ $f=1.0\text{MHZ}$	-	62	-	$\mu F$
Output Capacitance	$C_{oss}$		-	17	-	
Reverse Transfer Capacitance	$C_{rss}$		-	16	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10V, I_D=0.15A,$ $V_{GS}=4V,$ $R_G=10\Omega$ (Note 1,2)	-	4.7	-	ns
Turn-On Rise Time	$t_r$		-	19	-	
Turn-Off Delay Time	$t_{d(off)}$		-	22	-	
Turn-Off Fall Time	$t_f$		-	23	-	

**NOTES :**

1. Pulse width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics.
3.  $R_{\theta JA}$  is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper.
4. The maximum current rating is package limited.
5. Guaranteed by design, not subject to production testing.



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## TYPICAL CHARACTERISTIC CURVES

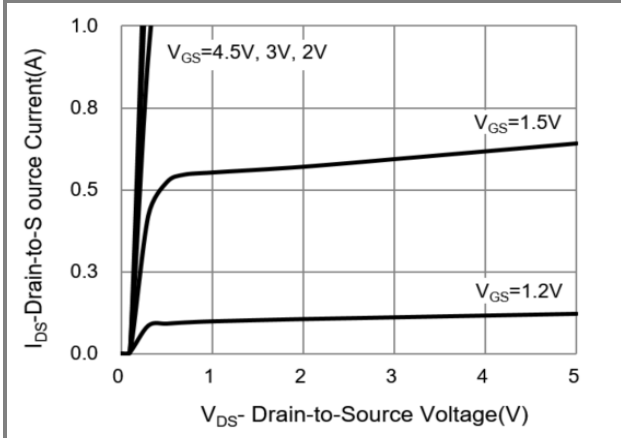


Fig.1 Output Characteristics

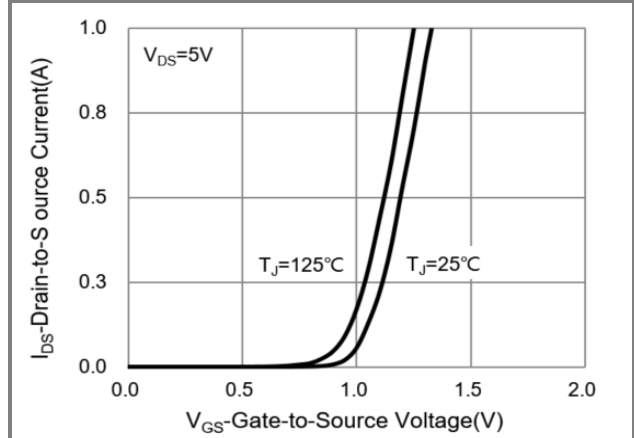


Fig.2 Transfer Characteristics

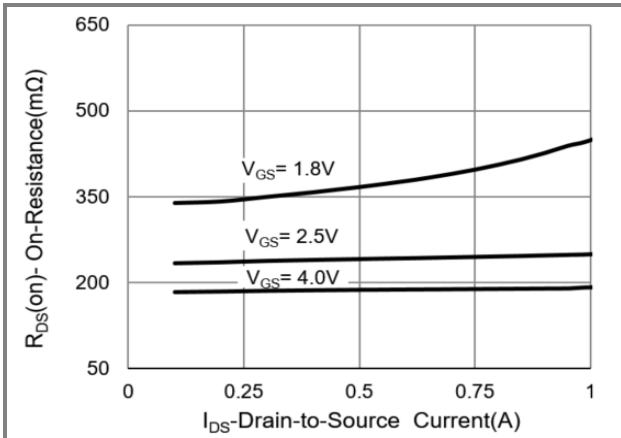


Fig.3 On-Resistance vs. Drain Current

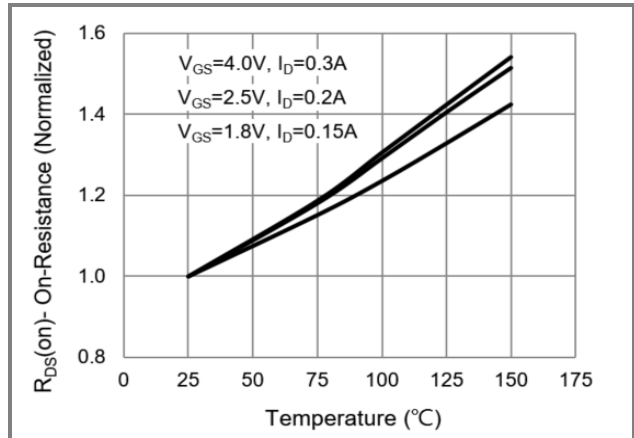


Fig.4 On-Resistance Variation with  $V_{GS}$

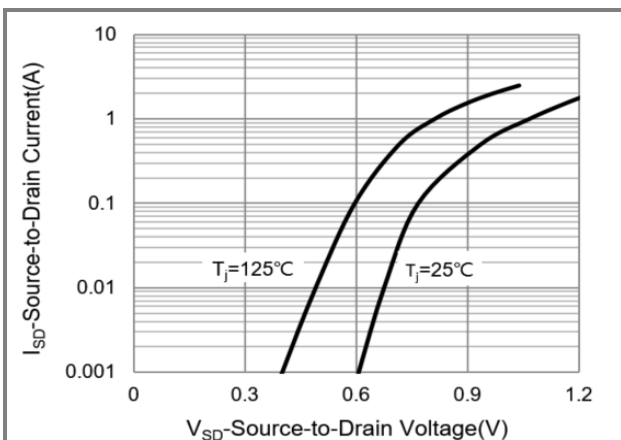


Fig.5 Body Diode Characteristics

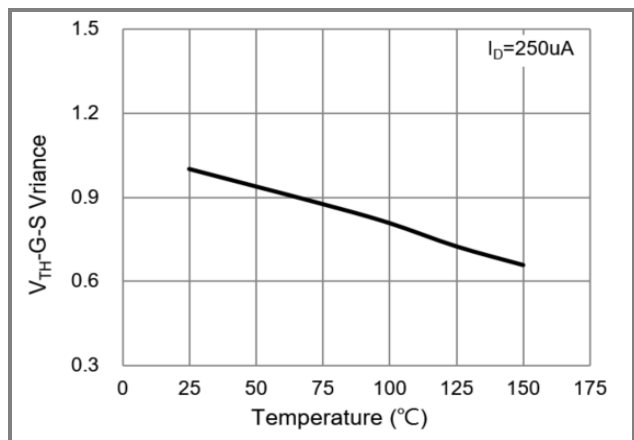


Fig.6 Threshold Voltage Variation with Temperature

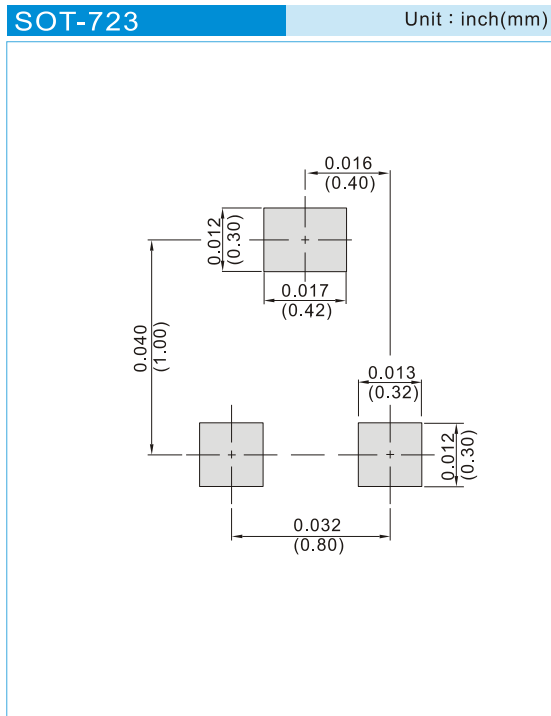


# PJV1704

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJV1704_R1_00001	SOT-723	8K pcs / 7" reel	P2	Halogen free

## Mounting Pad Layout





## PJV1704

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