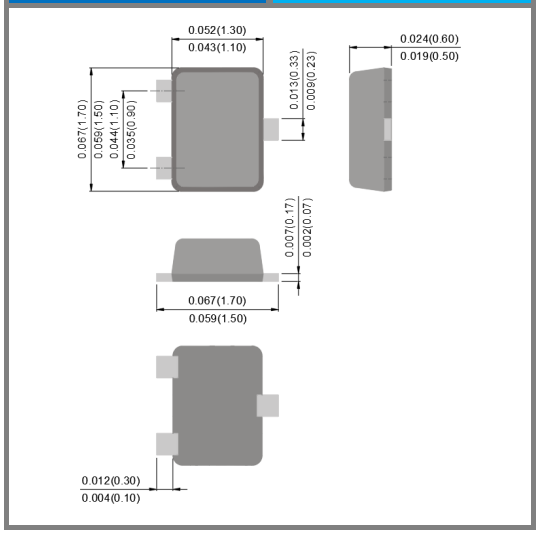
2N7002KTB

60V N-Channel Enhancement Mode MOSFET - ESD Protected

FEATURES

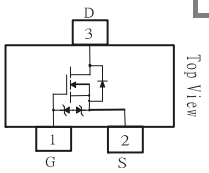
- $R_{DS(ON)}$, V_{GS}@10V,I_{DS}@500mA=3Ω
- $R_{DS(ON)}$, V_{GS}@4.5V,I_{DS}@200mA=4Ω
- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Very Low Leakage Current In Off Condition
- Specially Designed for Battery Operated Systems, Solid-State Relays Drivers : Relays, Displays, Lamps, Solenoids, Memories, etc.
- ESD Protected 2KV HBM
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

SOT-523 Dimension — Unit: inch(mm)



MECHANICAL DATA

- Case : SOT-523 Package
- Terminals : Solderable per MIL-STD-750,Method 2026
- Approx. Weight : 0.002 grams
- Marking : 27



Maximum RATINGS and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	115	mA
Pulsed Drain Current (Note 1)	I_{DM}	800	mA
Maximum Power Dissipation T_A=25°C T_A=75°C	P_D	200 150	mW
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to + 150	°C
Junction-to Ambient Thermal Resistance(PCB mounted)(Note 2)	$R_{\theta JA}$	883	°C/W

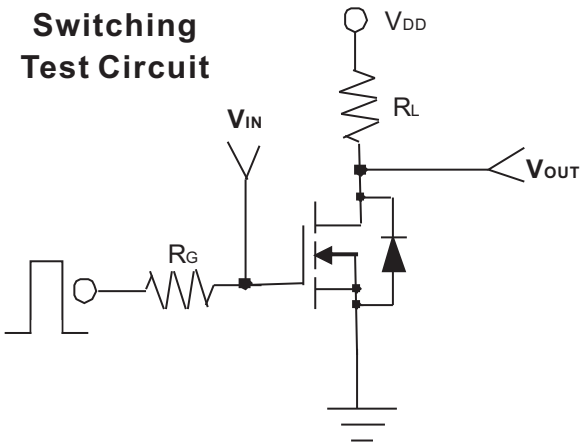
Notes : 1.Maximum DC current limited by the package
2.Surface mounted on FR4 board, t≤10 sec
3.Pulse width≤300us, Duty cycle≤2%

2N7002KTB

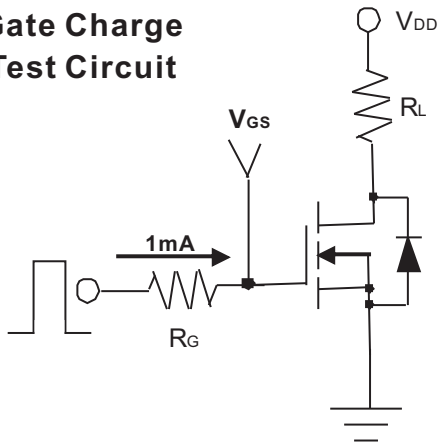
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=10μA	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=4.5V, I_D=200mA	-	-	4.0	Ω
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=500mA	-	-	3.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V	-	-	1	μA
Gate Body Leakage	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±10	μA
Forward Transconductance	g_{fS}	V_{DS}=15V, I_D=250mA	100	-	-	mS
Dynamic						
Total Gate Charge	Q_g	V_{DS}=15V, I_D=200mA V_{GS}=4.5V	-	-	0.8	nC
Turn-On Delay Time	$td_{(on)}$	V_{DD}=30V , R_L=150Ω I_D=200mA , V_{GEN}=10V R_G=10Ω	-	-	20	ns
Turn-Off Delay Time	$td_{(off)}$		-	-	125	
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V f=1.0MHz	-	-	35	pF
Output Capacitance	C_{oss}		-	-	10	
Reverse Transfer Capacitance	C_{rss}		-	-	5	
Source-Drain Diode						
Diode Forward Voltage	V_{SD}	I_S=200mA , V_{GS}=0V	-	0.82	1.3	V
Continuous Diode Forward Current	I_s	-	-	-	115	mA
Pulsed Diode Forward Current	I_{sM}	-	-	-	800	mA

Switching Test Circuit



Gate Charge Test Circuit



2N7002KTB

Typical Characteristics Curves (T_A=25°C,unless otherwise noted)

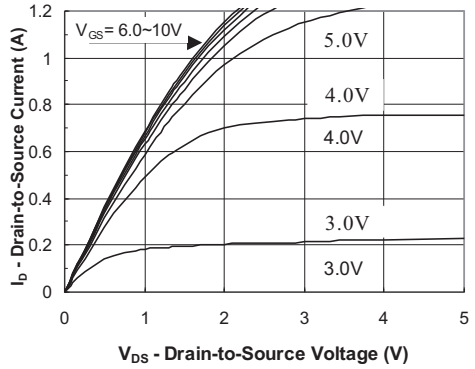


FIG.1- Output Characteristic

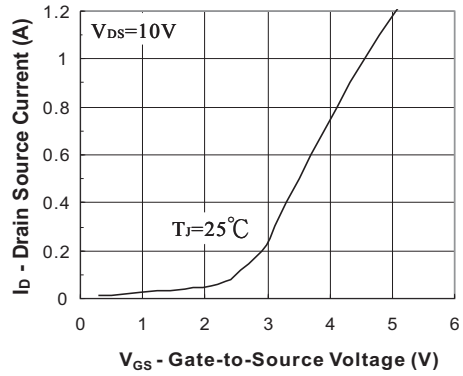


FIG.2- Transfer Characteristic

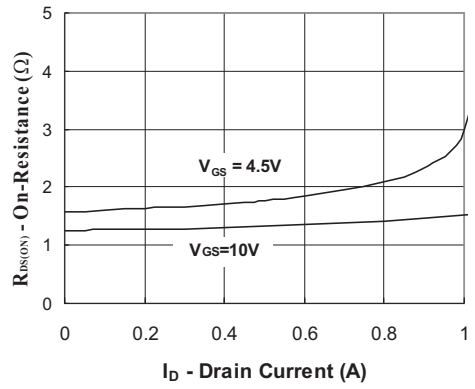


FIG.3- On Resistance vs Drain Current

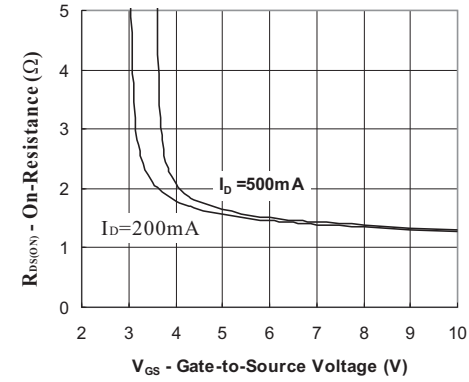


FIG.4- On Resistance vs Gate to Source Voltage

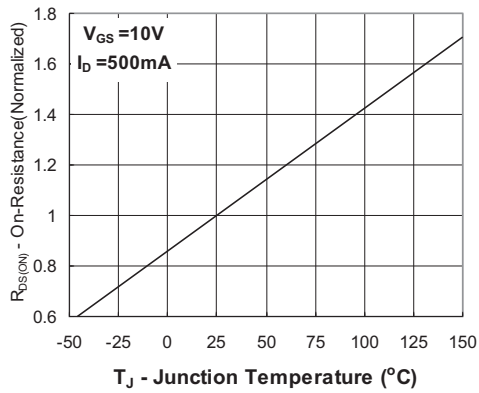


FIG.5- On Resistance vs Junction Temperature

2N7002KTB

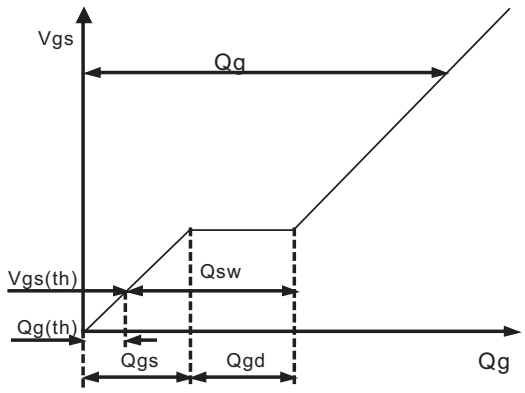


Fig.6 - Gate Charge Waveform

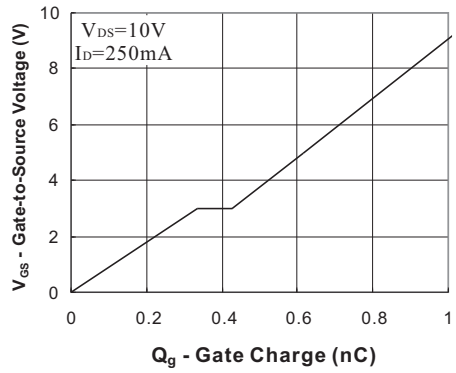


Fig.7 - Gate Charge

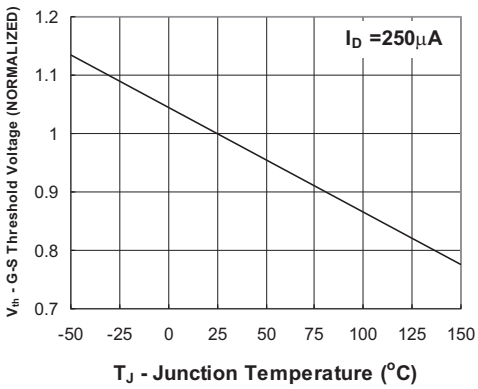


Fig.8 - Threshold Voltage vs Temperature

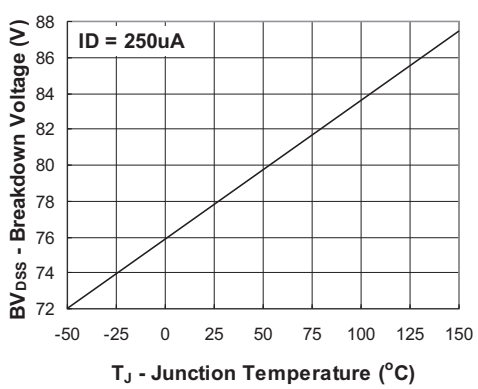


Fig.9 - Breakdown Voltage vs Junction Temperature

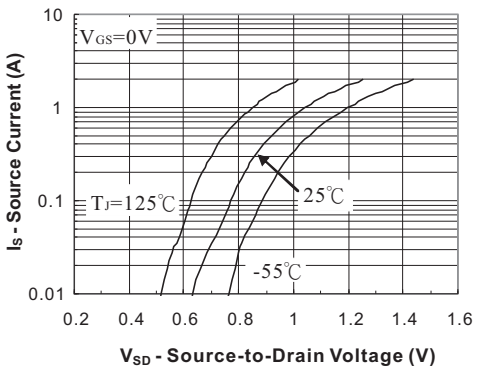
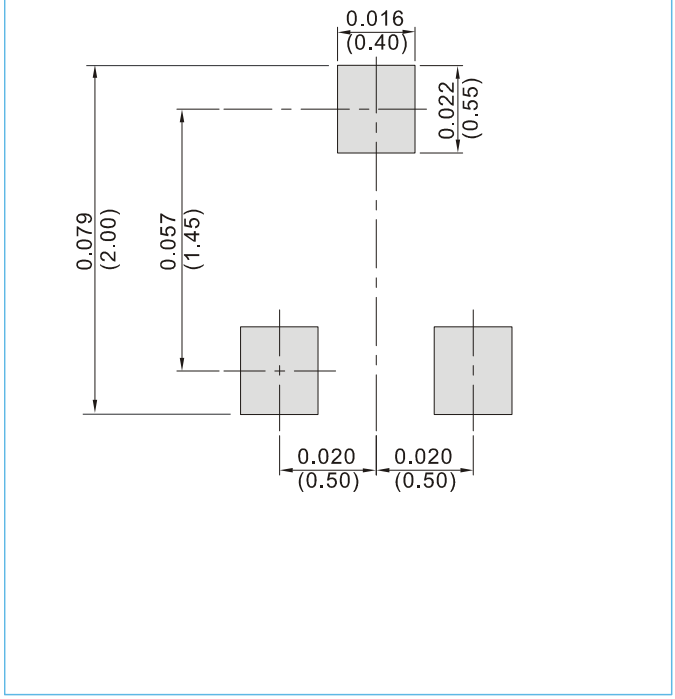


Fig.10 - Source-Drain Diode Forward Voltage

2N7002KTB

MOUNTING PAD LAYOUT

SOT-523 Unit : inch(mm)



ORDER INFORMATION

- Packing information

  T/R - 4K per 7" plastic Reel

2N7002KTB

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.

ENTEGRECİ

Bu belge www.entegreci.com üzerinden sunulmaktadır.

Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

www.entegreci.com

Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

www.entegreci.com | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.