SANKEN ELECTRIC

DKG1020

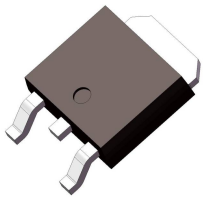
Aug. 2011

Features

- Low on-state resistance
- Built-in gate protection diode
- SMD PKG

Package

TO252



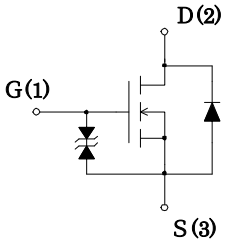
Applications

- DC / DC converter
- Switching

Key Specifications

- $V_{(BR)DSS}$ =100V (I_D=100uA)
- $R_{DS(ON)}$=52 mΩ max. (V_{GS}=10V, I_D=10A)
- $R_{DS(ON)}$=59 mΩ max. (V_{GS}=4.5V, I_D=10A)

Internal Equivalent Circuit



Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Drain to Source Voltage	V_{DSS}	100	V
Gate to Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	±20	A
Maximum Power Dissipation	P_D	40 (Tc=25°C)	W
Single Pulse Avalanche Energy	E_{AS} *1	62.5	mJ
Channel Temperature	T_{ch}	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C
Maximum Drain to Source dv/dt	dv/dt 1*1	0.6	V/ns
Peak diode recovery dv/dt	dv/dt 2*2	5	V/ns
Peak diode recovery di/dt	di/dt*2	100	A/μs

*1 V_{DD}=14V, L=1mH, I_L=11A, unclamped, See Fig.1

*2 Is_D=20A, See Fig.2

The information included herein is believed to be accurate and reliable. However, SANKEN ELECTRIC CO., LTD assumes no responsibility for its use ; nor for any infringements of patents or other rights of third parties that may result from its use.

Copy Right: SANKEN ELECTRIC CO.,LTD.

Electrical characteristics

(Ta=25°C)

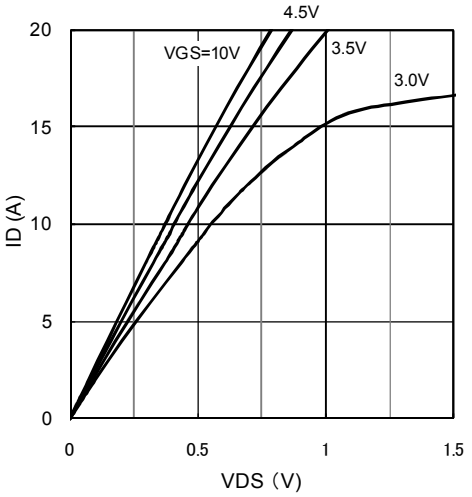
Characteristic	Symbol	Test Conditions	Limits			Unit
			MIN	TYP	MAX	
Drain to Source breakdown Voltage	$V_{(BR)DSS}$	I_D=100μA,V_{GS}=0V	100			V
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V			±10	μA
Drain to Source Leakage Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			100	μA
Gate Threshold Voltage	V_{TH}	V_{DS}=10V, I_D=1mA	1.5	2.0	2.5	V
Forward Transconductance	Re(yfs)	V_{DS}=10V, I_DD=10A	9.0			S
Static Drain to Source On-Resistance	$R_{DS(ON)}$	I_D=10A, V_{GS}=10V		41	52	mΩ
		I_D=10A, V_{GS}=4.5V		45	59	
Input Capacitance	Ciss	V_{DS}=10V V_{GS}=0V f=1MHz		2200		pF
Output Capacitance	Coss			210		
Reverse Transfer Capacitance	Crss			110		
Turn-On Delay Time	td(on)	I_D=10A, V_{DD}=50V R_G=20Ω, R_L=5Ω V_{GS}=10V See Fig.3		40		ns
Rise Time	tr			140		
Turn-Off Delay Time	td(off)			280		
Fall Time	tf			340		
Total Gate Charge	Qg	V_{DD}=50V V_{GS}=10V I_D=20V		47		nC
Gate to Source Charge	Qgs			8		
Gate to Source Charge	Qgd			7		
Source-Drain Diode Forward Voltage	V_{SD}	I_{SD}=20A,V_{GS}=0V		0.9	1.2	V
Source-Drain Diode Reverse Recovery Time	trr	I_{SD} =20A di/dt=100A/μs		50		ns
Source-Drain Diode Reverse Recovery Time	Qrr			60		nC
Tharmal Resistance Junction to Case	Rth(ch-c)				3.125	°C/W

The information included herein is believed to be accurate and reliable. However, SANKEN ELECTRIC CO., LTD assumes no responsibility for its use ; nor for any infringements of patents or other rights of third parties that may result from its use.

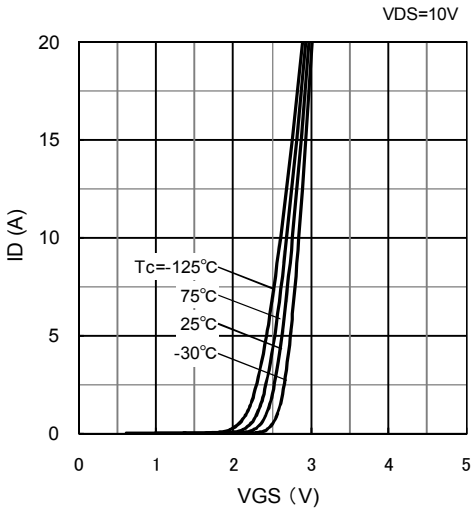
Copy Right: SANKEN ELECTRIC CO.,LTD.

Characteristic Curves (Tc=25°C)

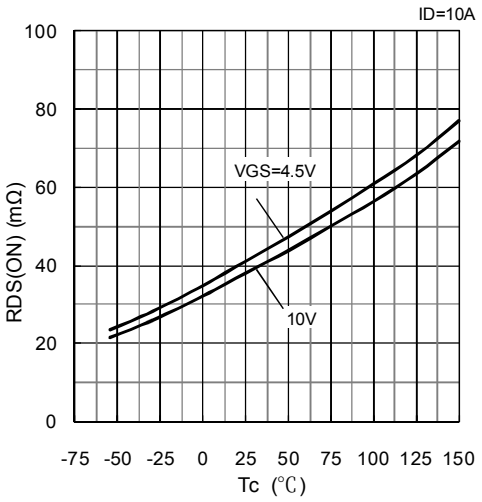
ID - VDS characteristics (typical)



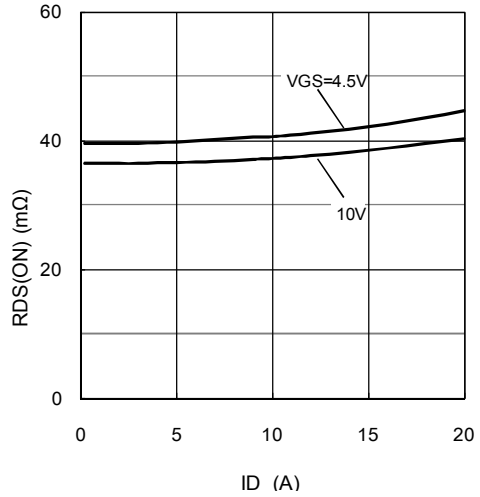
ID - VGS characteristics (typical)



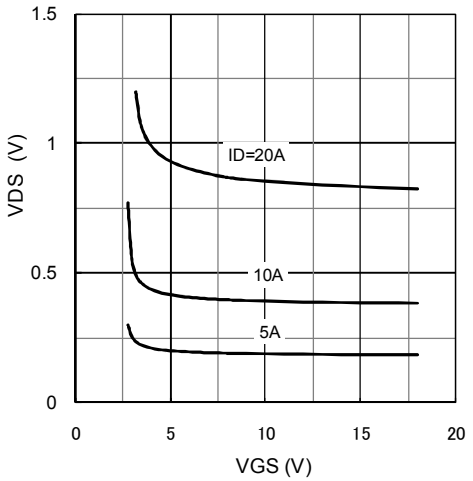
RDS(ON) - Tc characteristics (typical)



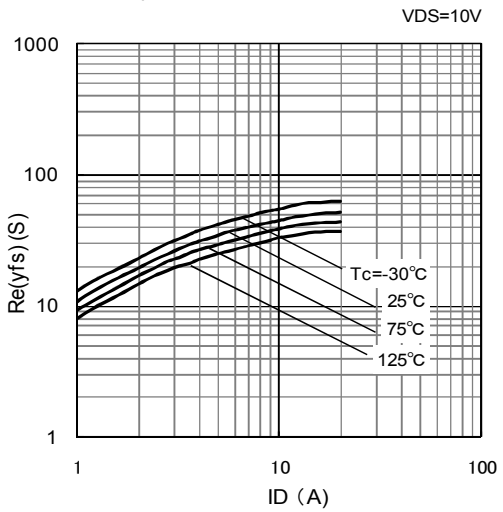
RDS(ON) - ID characteristics (typical)



VDS - VGS characteristics (typical)



Re(yfs) - ID characteristics (typical)

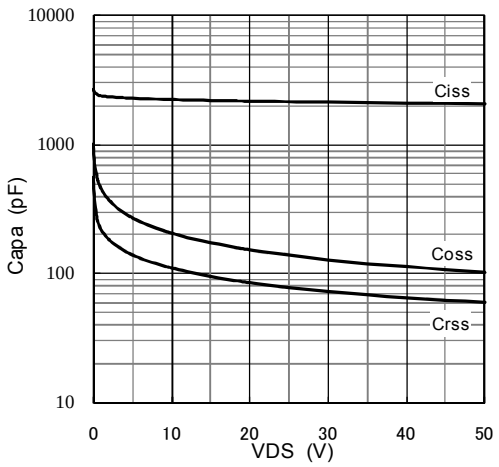


The information included herein is believed to be accurate and reliable. However, SANKEN ELECTRIC CO., LTD assumes no responsibility for its use ; nor for any infringements of patents or other rights of third parties that may result from its use.

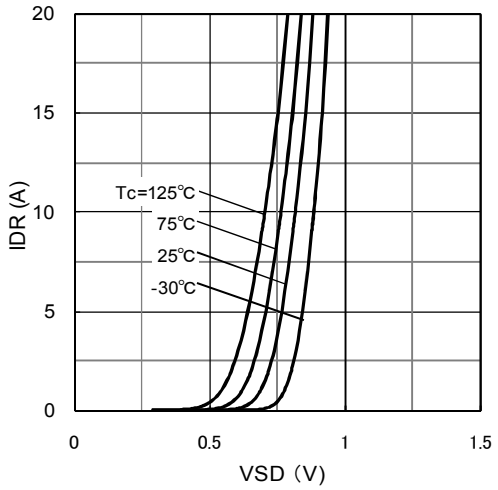
Copy Right: SANKEN ELECTRIC CO.,LTD.

Characteristic Curves (Tc=25°C)

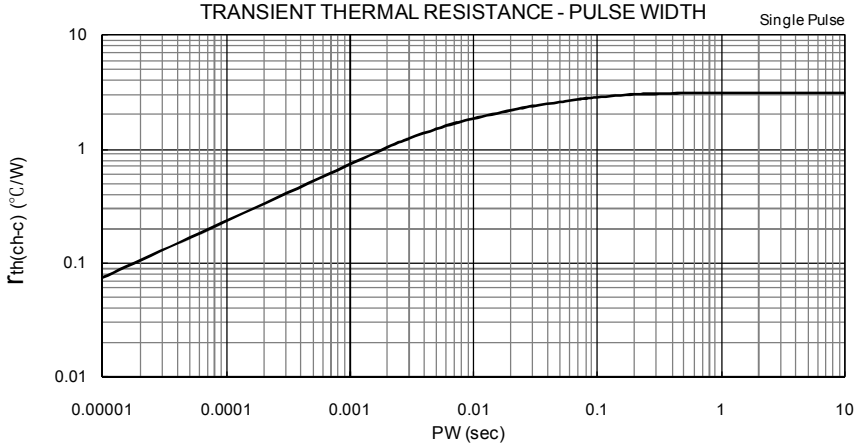
Capacitance - VDS characteristics (typical)



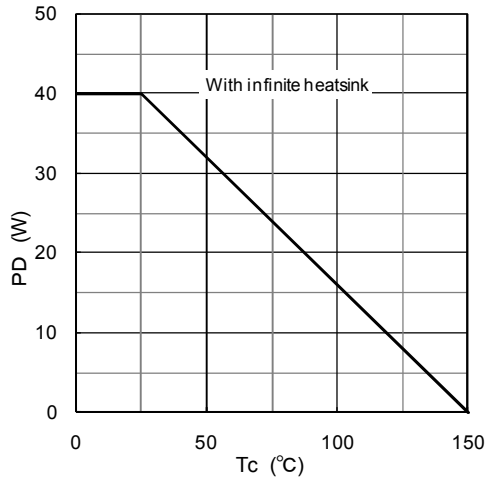
IDR - VSD characteristics (typical)



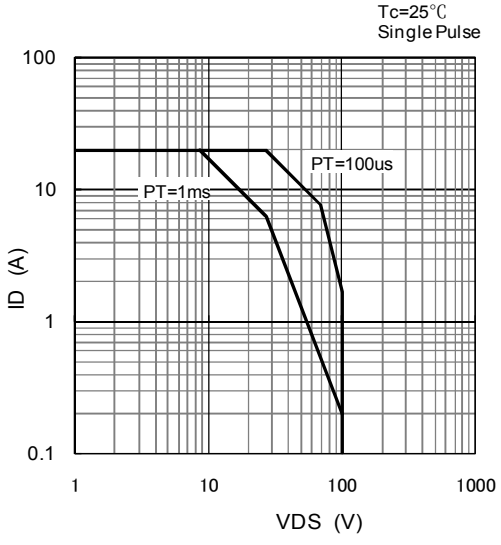
TRANSIENT THERMAL RESISTANCE - PULSE WIDTH



PD-Tc characteristics



SAFE OPARATING AREA

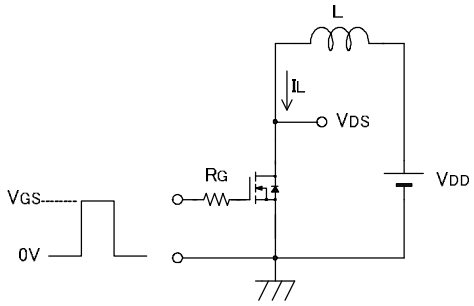


The information included herein is believed to be accurate and reliable. However, SANKEN ELECTRIC CO., LTD assumes no responsibility for its use ; nor for any infringements of patents or other rights of third parties that may result from its use.

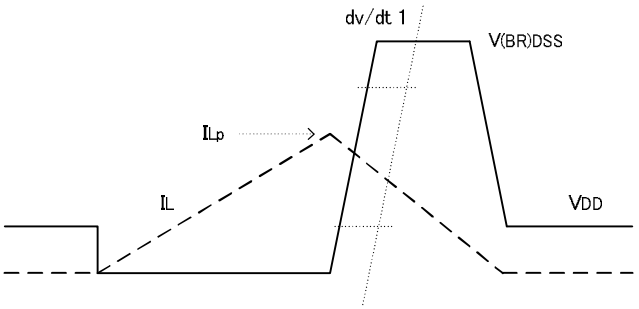
Copy Right: SANKEN ELECTRIC CO.,LTD.

Fig.1 Unclamped Inductive Test Method

$$EAS=\frac{1}{2}\cdot L\cdot ILP^2\cdot\frac{V(BR)DSS}{V(BR)DSS-VDD}$$

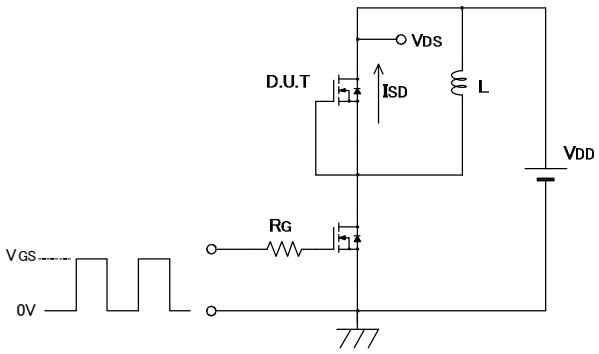


(a) Test Circuit

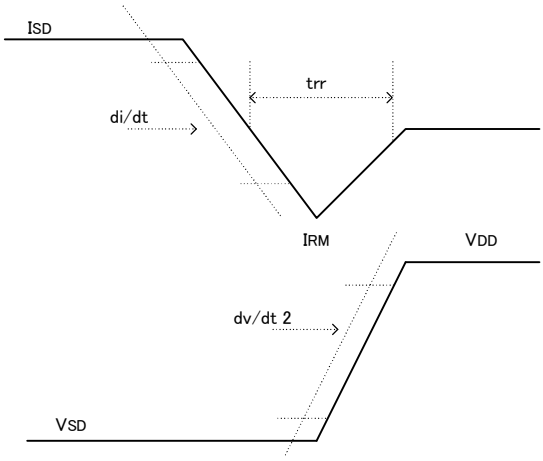


(b) Waveforms

Fig.2 Diode Reverse Recovery Time Test Method

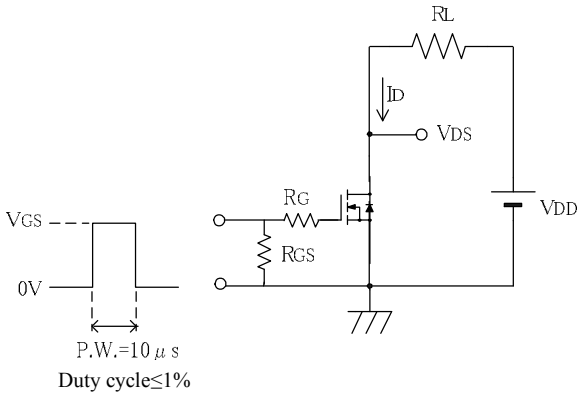


(a) Test Circuit

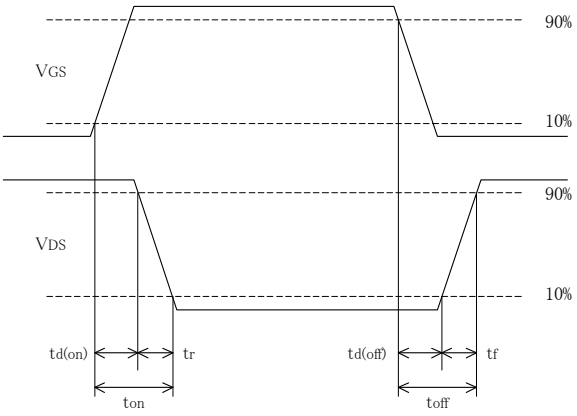


(b) Waveforms

Fig.3 Switching Time Test Method



(a) Test Circuit

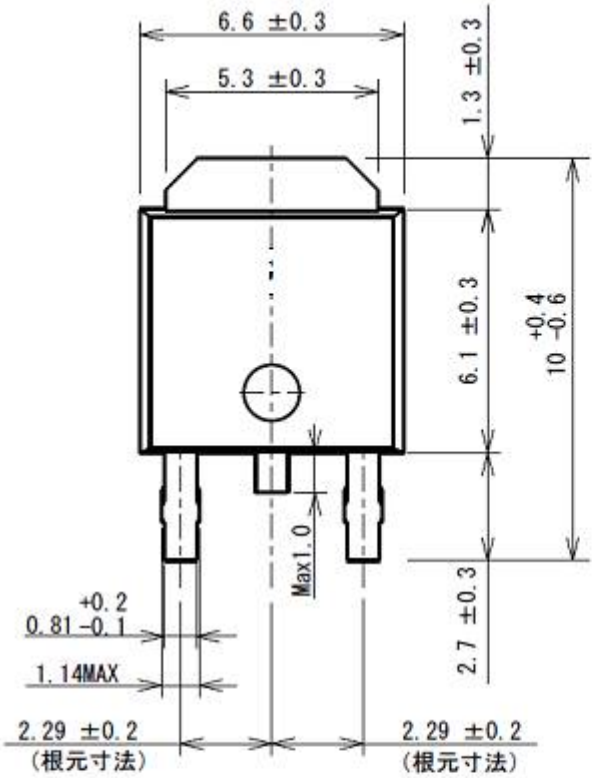


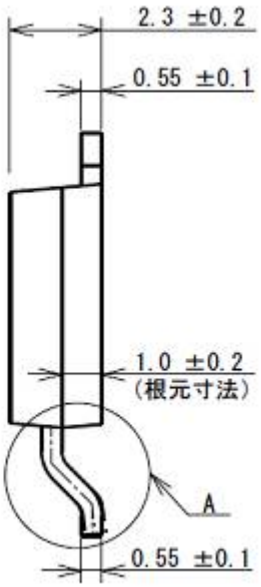
(b) Waveforms

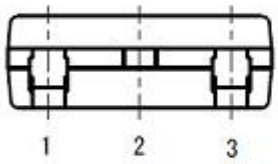
The information included herein is believed to be accurate and reliable. However, SANKEN ELECTRIC CO., LTD assumes no responsibility for its use ; nor for any infringements of patents or other rights of third parties that may result from its use.

Outline

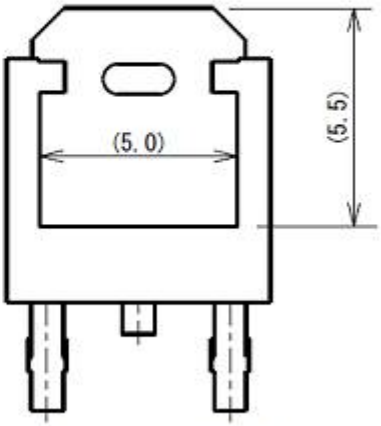
TO252



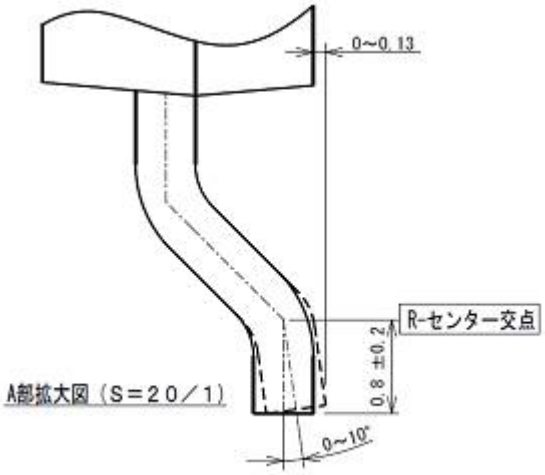




Pin assignment
(1) Gate
(2) Drain
(3) Source



裏面 フィン詳細図



Weight Approx.0.33g

The information included herein is believed to be accurate and reliable. However, SANKEN ELECTRIC CO., LTD assumes no responsibility for its use ; nor for any infringements of patents or other rights of third parties that may result from its use.

Copy Right: SANKEN ELECTRIC CO.,LTD.

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.