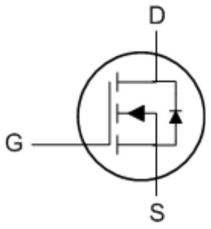
SK15N10

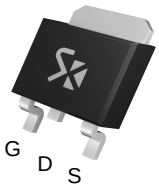
N-Channel 100V (D-S) MOSFET

General Description

The SK15N10 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance.These devices are particularly suited for medium voltage application such as charger, adapter, notebook computer power management and other lighting dimming powered circuits, and low in-line power loss that are needed in a very small outline surface mount package.

BV_{DSS}	$R_{DS(ON),typ.}$	I_D
100V	80mΩ	15.4A





TO-252

Package No to Scale

Features

- $R_{DS(ON)}$≦100mΩ@V_{GS}=10V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

Applications

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC

Ordering Information

Part Number	Package
SK15N10	TO-252

Absolute Maximum Ratings

T_C=25℃ unless otherwise specified

Symbol	Parameter		SK15N10	Unit
V_{DSS}	Drain-to-Source Voltage		100	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current		15.4	A
P_D	Power Dissipation [4]	T_C= 25°C	40	W
	Power Dissipation	T_A= 25°C	1.2	W
T_J & T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Caution: Stresses greater than those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device.

Thermal Characteristics

Symbol	Parameter	SK15N10	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	3.12	℃/W
$R_{\theta JA}$	Junction-to-Ambient (mounted on 1 inch square PCB)	105	

Electrical Characteristics

OFF Characteristics

T_J =25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	100	--	--	V	V_{GS}=0V, I_D=250uA
I_{DSS}	Drain-to-Source Leakage Current	--	--	1	uA	V_{DS}=80V, V_{GS}=0V
I_{GSS}	Gate-to-Source Leakage Current	--	--	+100	nA	V_{GS}=+20V, V_{DS}=0V
		--	--	-100		V_{GS}=-20V, V_{DS}=0V

ON Characteristics

T_J =25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
$R_{DS(ON)}$	Static Drain-Source On-Resistance	--	80	100	mΩ	V_{GS}=10V, I_D=8A
$V_{GS(TH)}$	Gate Threshold Voltage	1.0	--	3.0	V	V_{DS}=V_{GS}, I_D=250uA
gfs	Forward Transconductance	--	15	--	S	V_{DS}=10V,I_D=8A

Dynamic Characteristics

Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
Rg	Gate Resistance	--	0.9	--	Ω	V_{DS}=0V, V_{GS}=0V, f=1MHz
C_{iss}	Input Capacitance	--	890	--	pF	V_{GS}=0V, V_{DS}=15V, f=1MHz
C_{rss}	Reverse Transfer Capacitance	--	23	--		
C_{oss}	Output Capacitance	--	58	--		
Q_g	Total Gate Charge	--	24	--	nC	V_{DS}=80V, I_D=10A, V_{GS}=10V
Q_g	Total Gate Charge	--	13	--	nC	V_{DS}=80V, I_D=10A, V_{GS}=4.5V
Q_{gs}	Gate-to-Source Charge	--	4.6	--		
Q_{gd}	Gate-to-Drain (Miller) Charge	--	7.6	--		

Resistive Switching Characteristics

Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
$td_{(ON)}$	Turn-on Delay Time	--	14	--	ns	V_{DS}=50V,R_L=5Ω, V_{GEN}=10V,R_G=1Ω
t_{rise}	Rise Time	--	33	--		
$td_{(OFF)}$	Turn-Off Delay Time	--	39	--		
t_{fall}	Fall Time	--	5	--		

Source-Drain Body Diode Characteristics

T_J=25℃ unless otherwise specified

Symbol	Parameter	Min	Typ.	Max.	Unit	Test Conditions
V_{SD}	Diode Forward Voltage	--	0.9	1.2	V	T_J=25°C, I_S=8A, V_{GS}=0V
t_{rr}	Reverse Recovery Time	--	25	--	ns	I_D=7A, V_{GS}=0V, di/dt=100A/μs
Q_{rr}	Reverse Recovery Charge	--	24	--	nC	I_D=7A, V_{GS}=0V, di/dt=100A/μs

Note: [1]The data tested by pulsed, pulse width ≦ 300us, duty cycle ≦ 2%.

Typical Characteristics

Figure 1. Capacitance

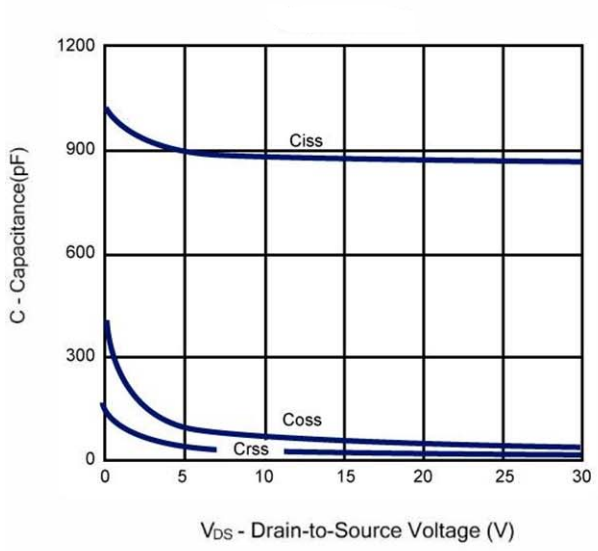


Figure 2. On-Resistance vs. Gate-to-Source Voltage

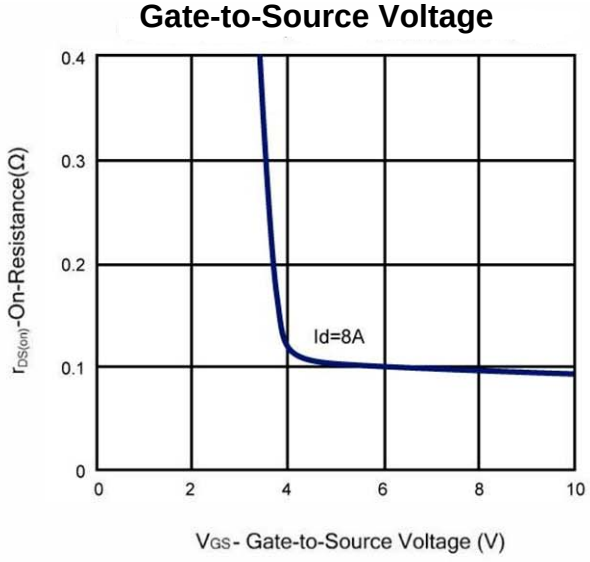


Figure 3. Threshold Voltage

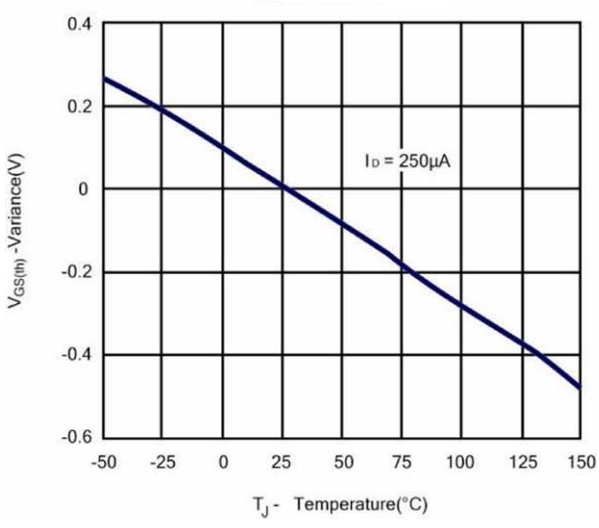
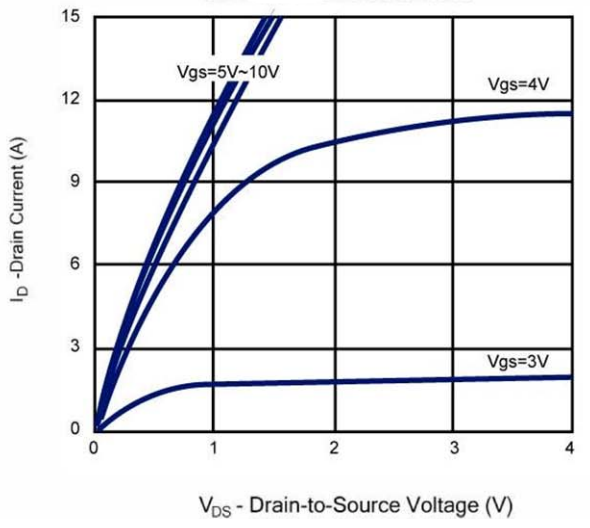


Figure 4. On-Region Characteristics



Typical Characteristics

Figure 5. Gate Charge

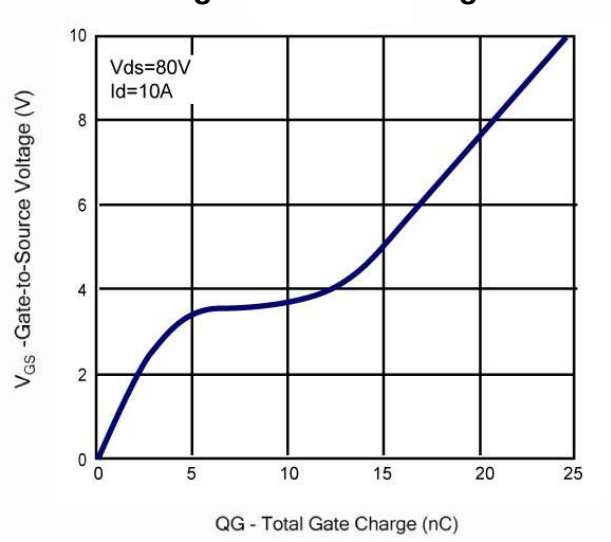


Figure 6. Body-diode characteristics

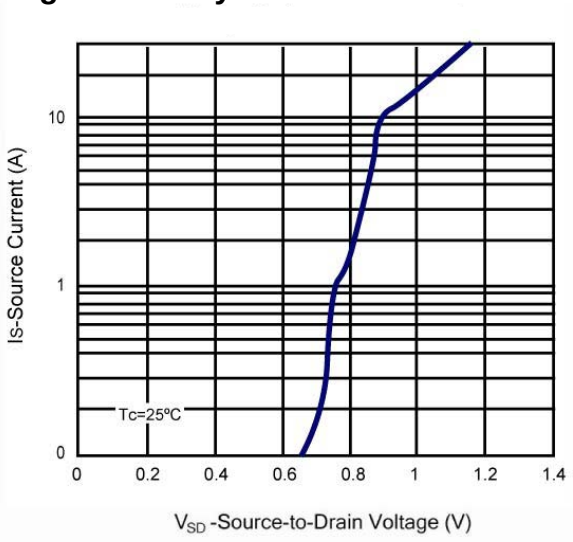
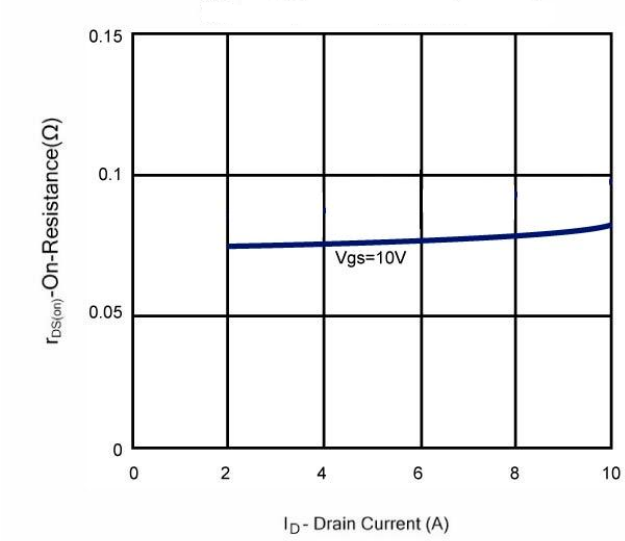
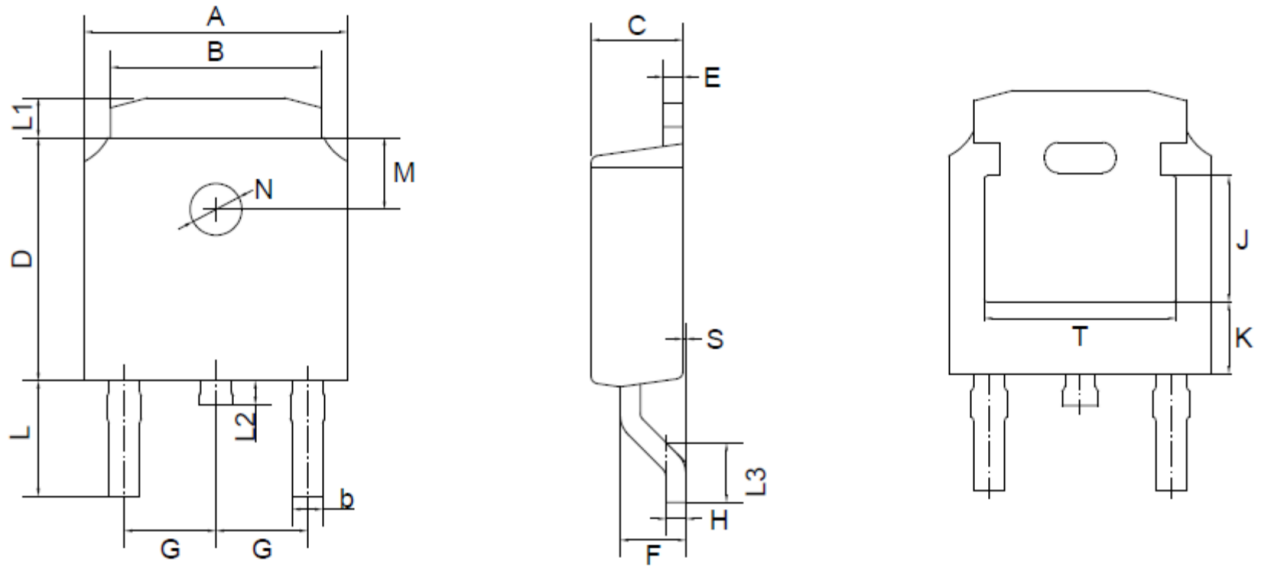


Figure 7. On-Resistance vs. Drain Current



Package Outline

TO-252(D-PAK)



TO-252(D-PAK) mechanical data

UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	L3	S	M	N	J	K	T
mm	max	6.7	5.5	0.8	2.5	6.3	0.6	1.8	2.29 TYPICAL	0.55	3.1	1.2	1.0	1.75	0.1	1.8 TYPICAL	1.3 TYPICAL	3.16 ref.	1.80 ref.	4.83 ref.
	min	6.3	5.1	0.3	2.1	5.9	0.4	1.3		0.45	2.7	0.8	0.6	1.40	0.0					
mil	max	264	217	31	98	248	24	71	90 TYPICAL	22	122	47	39	69	4	71 TYPICAL	51 TYPICAL	124 ref.	71 ref.	190 ref.
	min	248	201	12	83	232	16	51		18	106	31	24	55	0					

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.