Features

- SiC MOSFET technology
- High blocking voltage with low on-resistance
- High-speed switching with low capacitances
- Halogen Free. “Green” Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-CHANNEL MOSFET

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 1.7°C/W Junction to Case

Applications

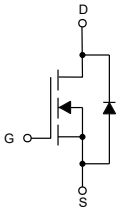
- Solar Inverters
- Switch Mode Power Supplies
- High Voltage DC/DC Converters
- Battery Chargers
- Motor Drives

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	1700	V
Gate-Source Voltage	V_{GSmax}	-5/+25	V
Gate-Source Voltage	V_{GSop}	-3/+20	V
Continuous Drain Current	I_D	3	A
Pulsed Drain Current (1)	I_{DM}	12	A
Total Power Dissipation	P_D	69	W

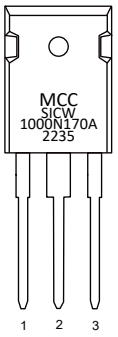
Note:

1. Pulse Test: Pulse Width≤10μs,Duty Cycle ≤1%.

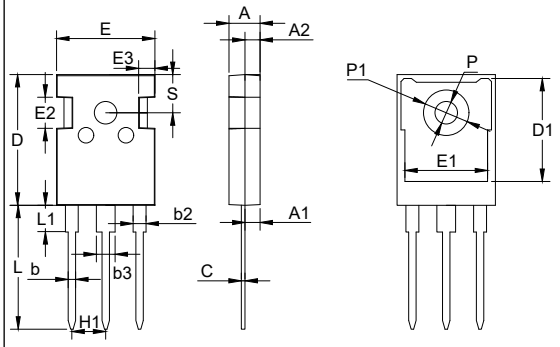
Internal Structure



1. Gate
2. Drain
3. Source



TO-247AB



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.189	0.205	4.80	5.20	
A1	0.087	0.103	2.21	2.61	
A2	0.073	0.085	1.85	2.15	
b	0.039	0.055	1.00	1.40	
b2	0.075	0.087	1.91	2.21	
C	0.020	0.028	0.50	0.70	
D	0.815	0.839	20.70	21.30	
D1	0.640	0.663	16.25	16.85	
E	0.610	0.634	15.50	16.10	
E1	0.512	0.535	13.00	13.60	
E2	0.189	0.205	4.80	5.20	
E3	0.091	0.106	2.30	2.70	
L	0.772	0.796	19.62	20.22	
L1	-	0.169	-	4.30	
P	0.134	0.150	3.40	3.80	Φ
P1		0.287	-	7.30	Φ
S	0.242		6.15		TYP
H1	0.214		5.44		TYP
b3	0.110	0.126	2.80	3.20	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	1700			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±250	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=1700V, V_{GS}=0V			10	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=10V, I_D=1mA	2.5		4.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=20V, I_D=1.5A		1100	1320	mΩ
		V_{GS}=18V, I_D=1.5A		1140	1370	mΩ
		V_{GS}=15V, I_D=1.5A		1230	1480	mΩ
		V_{GS}=20V, I_D=1.5A,T_C=150°C		1690		mΩ
Diode Characteristics						
Continuous Body Diode Current	I_S			3		A
Diode Forward Voltage	V_{SD}	V_{GS}=-3V, I_S=1.5A		5.5		V
Reverse Recovery Time	t_{rr}	V_{GS}=-3/20V, I_{SD}=3A, dI_F/dt=300A/μs		7.5		ns
Reverse Recovery Charge	Q_{rr}			5		nC
Peak Reverse Recovery Current	I_{rrm}			1		A
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=1000V,V_{GS}=0V,f=1MHz		124		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			4.5		
Internal Gate Resistance	R_g			6		Ω
Total Gate Charge	Q_g	V_{DS}=1000V,V_{GS}=-3/+20V I_D=3A		15.5		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			9		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=800V, V_{GS}=-3/+20V, R_G=25Ω, I_{DS}=3A		34		ns
Turn-On Rise Time	t_r			57		
Turn-Off Delay Time	$t_{d(off)}$			33		
Turn-Off Fall Time	t_f			45		

Curve Characteristics

Fig. 1 Forward Output Characteristics at T_j = 25°C

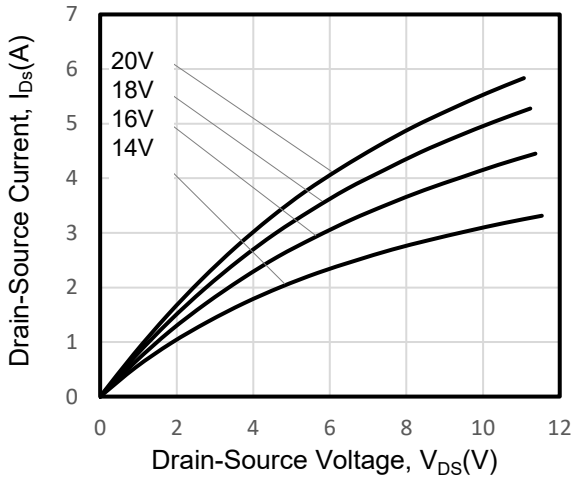


Fig. 2 Forward Output Characteristics at T_j = 150°C

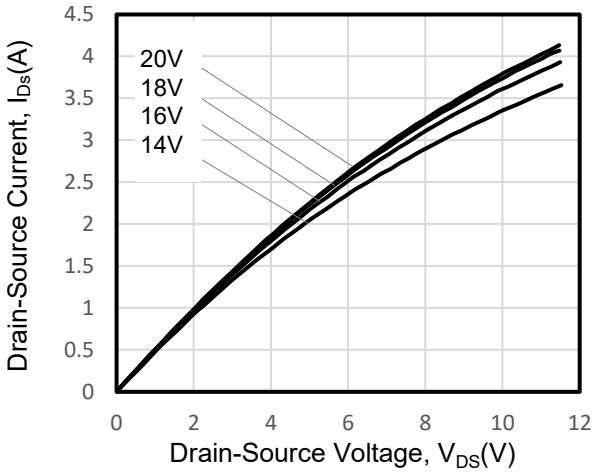


Fig. 3 On-Resistance vs. Drain Current for Various T_j

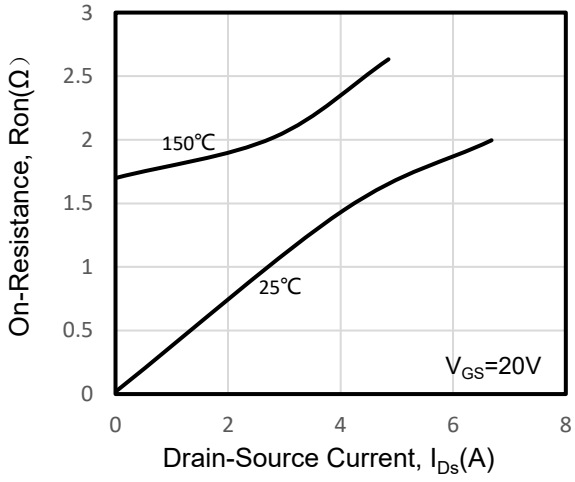


Fig. 4 Transfer Characteristics for Various T_j

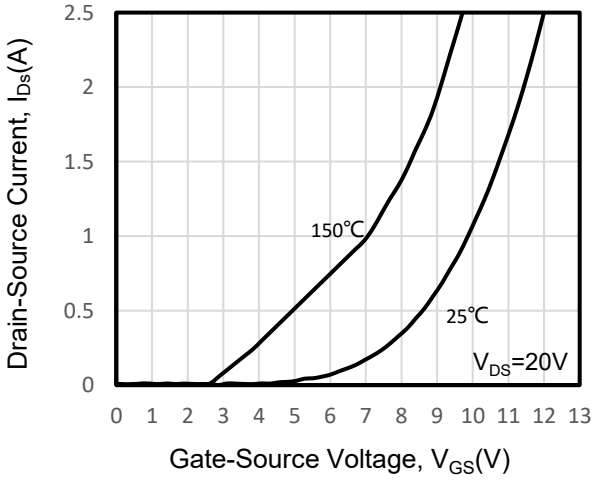


Fig. 5 On-Resistance vs. Gate Voltage for Various T_j

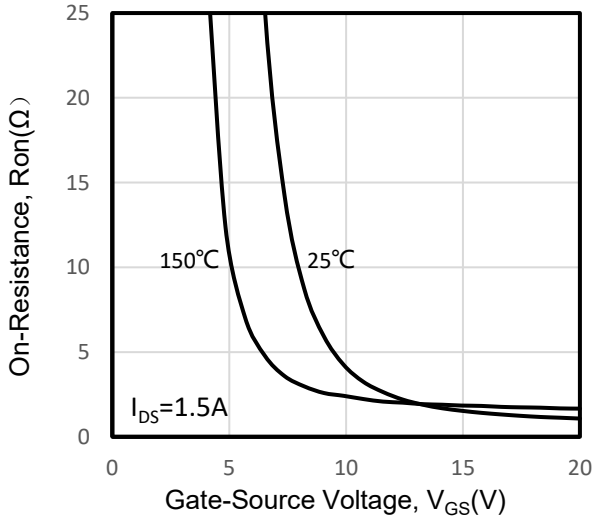
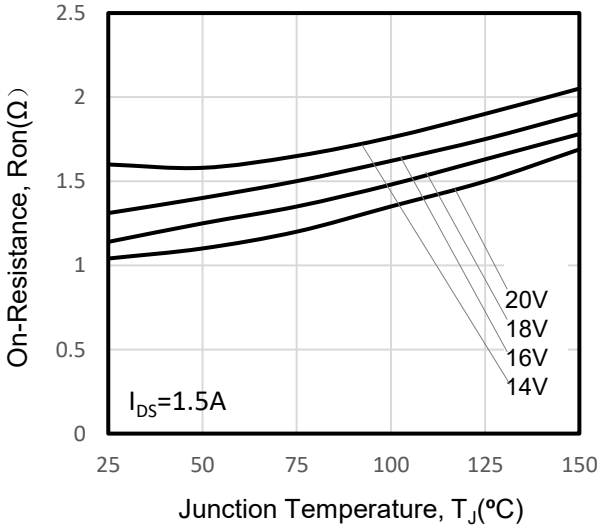


Fig. 6 On-Resistance vs. Temperature for Various Gate Voltage



Curve Characteristics

Fig. 7 Normalized On-Resistance vs. Temperature

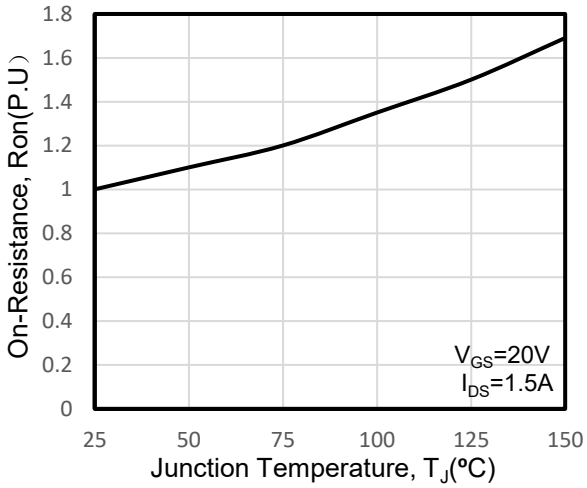


Fig. 8 Reverse Output Characteristics at T_j = 25°C

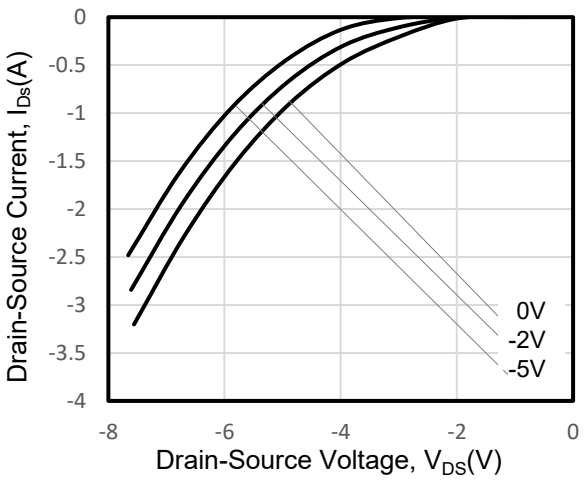


Fig. 9 Reverse Output Characteristics at T_j = 150°C

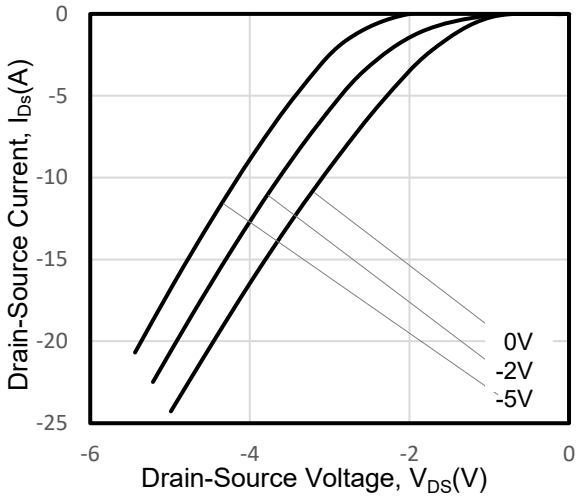


Fig. 10 Capacitances vs. Drain to Source Voltage (0 - 200V)

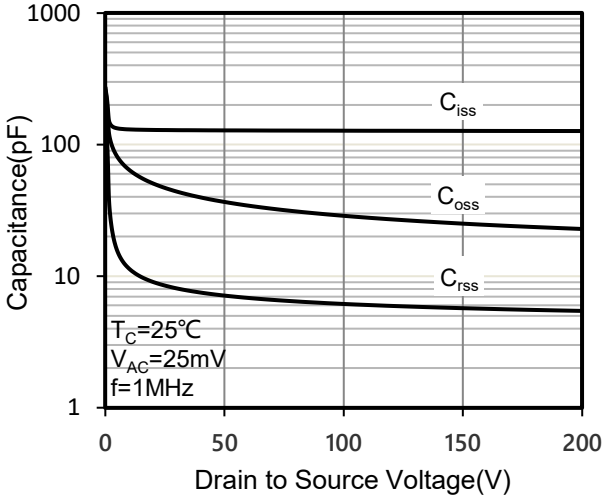


Fig. 11 Capacitances vs. Drain to Source Voltage (0 - 1000V)

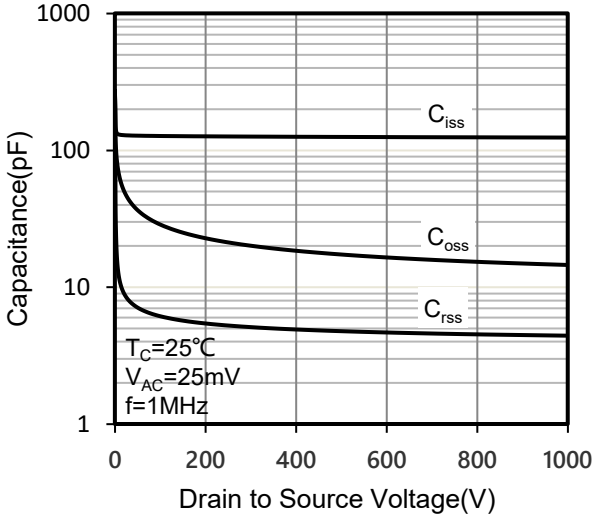
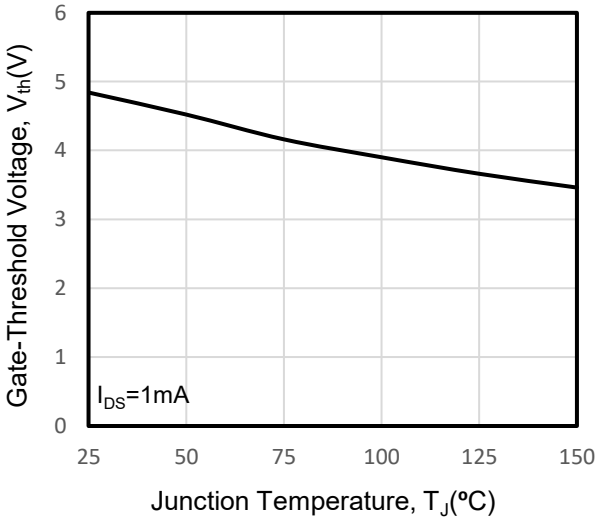


Fig. 12 Threshold Voltage vs. Temperature



Curve Characteristics

Fig. 13 Gate Charge Characteristics

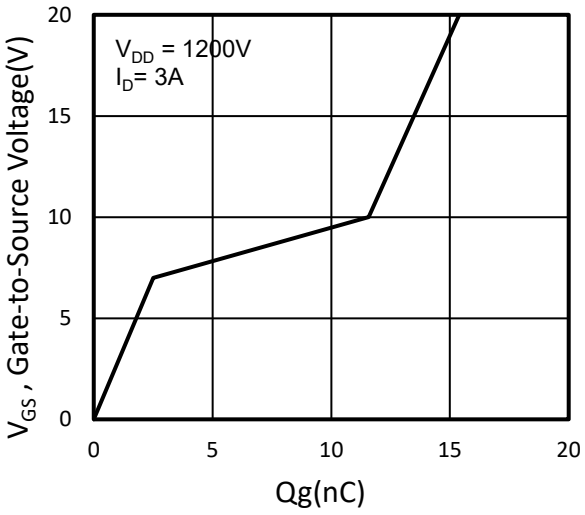


Fig.14 Maximum Power Dissipation Derating vs. Case Temperature

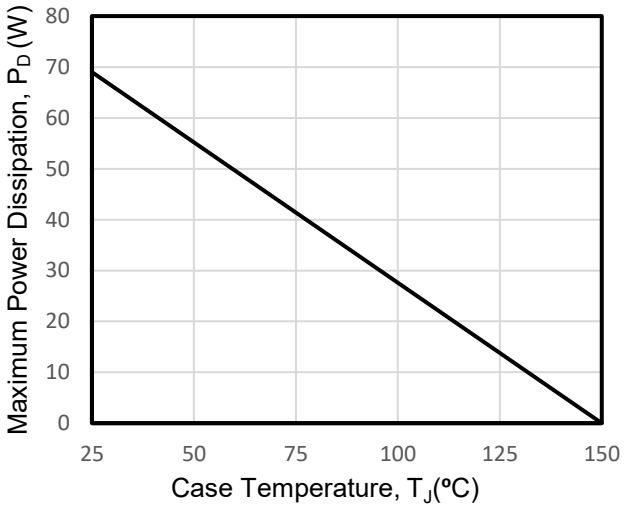


Fig. 15 Drain Current Derating vs. Case Temperature

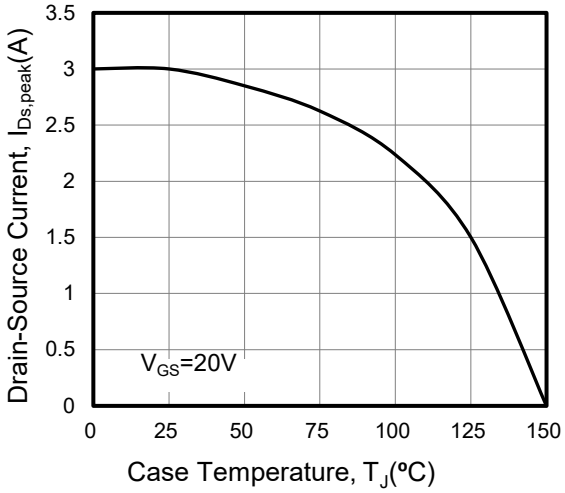


Fig. 16 Transient Junction to Case Thermal Impedance

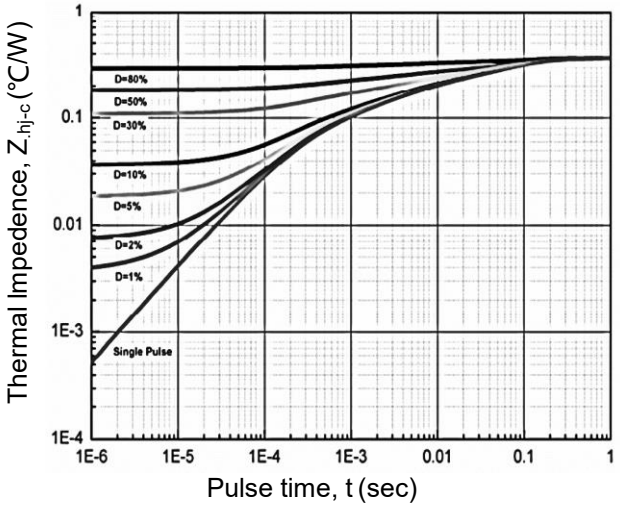
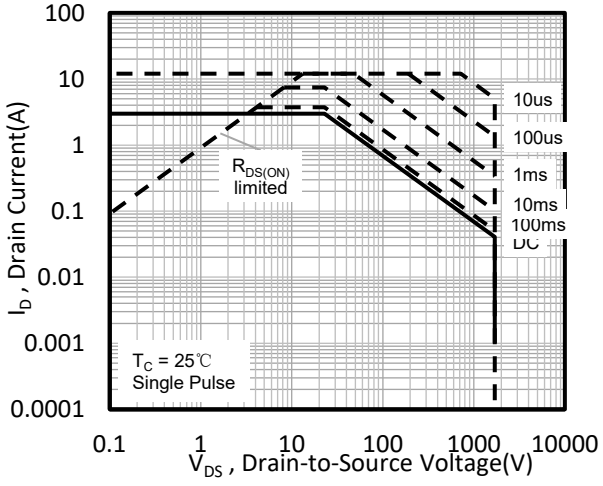


Fig. 17 Safe Operating Area



Ordering Information

Device	Packing
SICW1000N170A-BP	Tube:30pcs/Tube, 360pcs/Box,1.8K/Ctn;

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . ***Micro Commercial Components Corp*** . does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold ***Micro Commercial Components Corp*** . and all the companies whose products are represented on our website, harmless against all damages. ***Micro Commercial Components Corp***. products are sold subject to the general terms and conditions of commercial sale, as published at
https://www.mccsemi.com/Home/TermsAndConditions.

*****LIFE SUPPORT*****

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

*****CUSTOMER AWARENESS*****

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources**. MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

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.