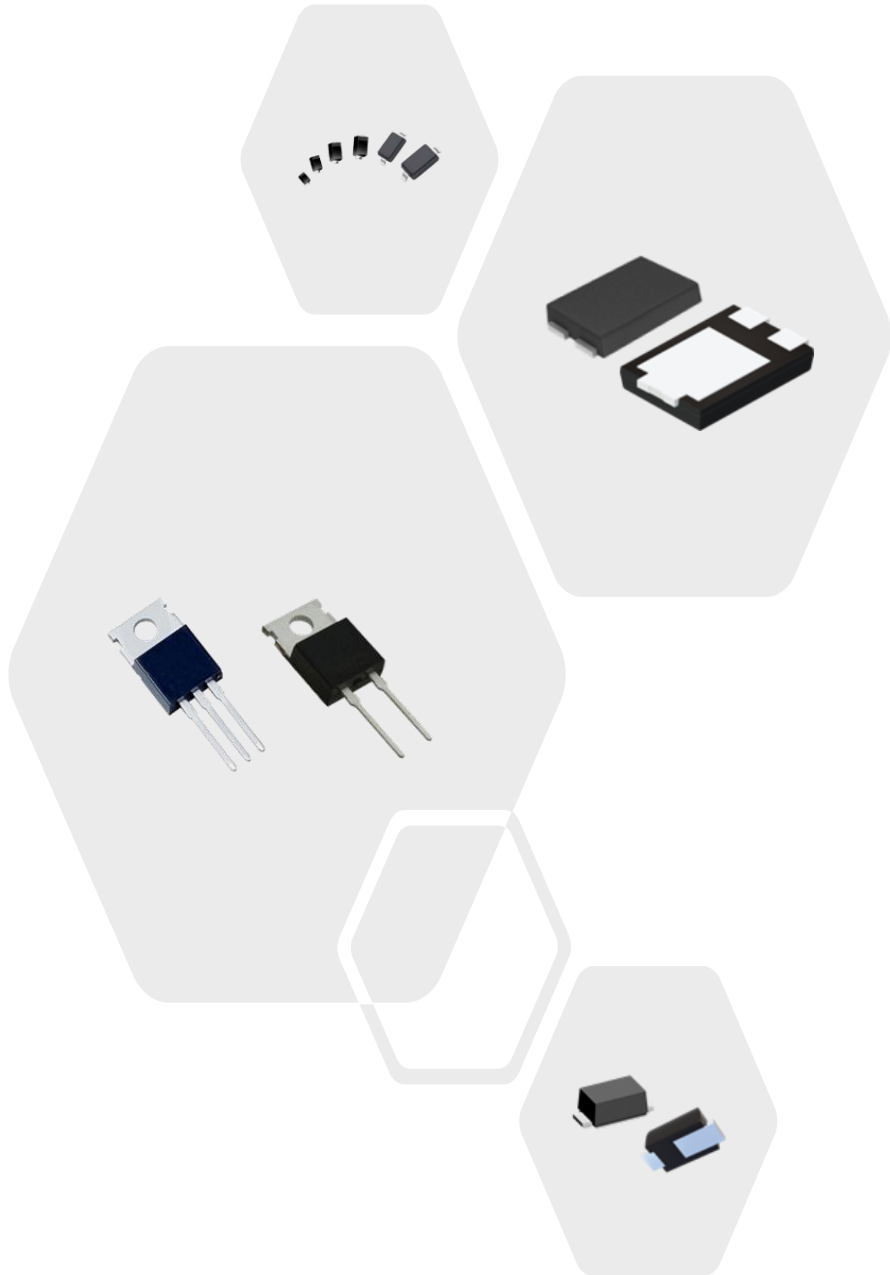


Automotive Selection Guide

Marketing Dept.
James Hsieh



Content

- Company Profile
- Core technology
- Quality
- Product List
- Automotive Product
 - > Schottky Diodes
 - > Rectifier
 - > TVS
- Automotive Application
- Test Equipment
- Package Type

◆ Company Profile

- Established : 2001
- Capital : USD \$ 12 Million
- Employees : 40 people

◆ Company positioning

- Become a professional discrete semiconductor device manufacturing company

◆ Management Team

- Chairman : Mr. S. J. Chen (Chairman of GlobalSat & Sonix)
- CEO : Dr. Greg Lan (Senior Manager of Hughes Electronics)
(Chairman/CEO of Himark)

◆ Honor

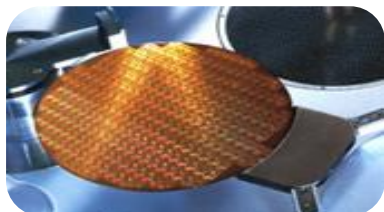
The CITC was nominated the excellent in execution of Industrial Technology Development program by the Department of Industrial Technology, Ministry of Economic Affairs in 2005.



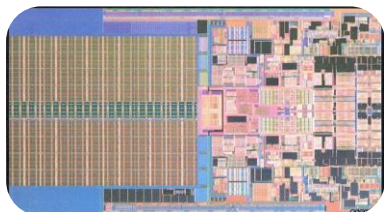
CITC focuses on the research and development of discrete semiconductor components, and has a number of discrete semiconductor components process and product patents.



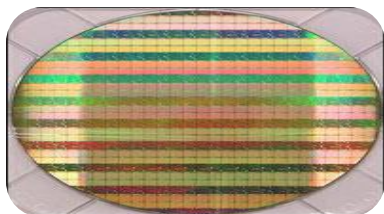
- ESD Protection Devices



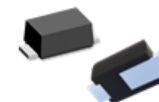
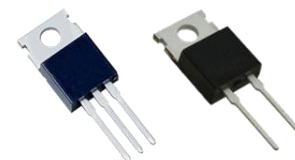
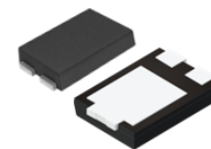
- Planar Schottky Process



- MOS Schottky Process



- Trench Schottky Process



NO.	Location	Patent
I226709	R.O.C	Schottky diode structure and its production method
I234289	R.O.C	Schottky diode with high breakdown voltage and low reverse leakage current
I237901	R.O.C	Schottky diode and its production method
I263344	R.O.C	Schottky barrier diode and its production method
362744	CN	Power Schottky rectifier device and its production method
312861	CN	Schottky diode with high breakdown voltage and low reverse leakage current
449005	CN	Schottky diode structure and its production method
6,936,905	USA	Two mask Schottky diode with locos structure
6,998,694	USA	High switching speed two mask Schottky diode with high field breakdown
6,825,073	USA	Schottky diode with high field breakdown and low reverse leakage current
7,064,408	USA	Schottky barrier diode and method of making the same-Trench
7,078,780	USA	Schottky barrier diode and method of making the same
7.368.371	USA	Silicon carbide Schottky diode and method of making the same
7.491.633	USA	High switching speed two mask Schottky diode with high field breakdown
11/453,799	USA	Method of forming low forward voltage Schottky barrier diode with LOCOS structure therein

Quality Assurance

The CITC is dedicated to improving quality control through our continued efforts in the technology innovation, striving for excellence by delivering the best and making positive contributions in order to provide customers with value-added products and services and to meet the market demands and expectations.

Environmental protection policy

To adapt to the global trend in energy saving and carbon reduction and to reduce the environmental pollution, the CITC promises to conform to international standards and regulations in design, development and manufacture processes. All CITC's products have been certified by the ROHS international protection inspection directive. We're committed to contribute in green initiatives and to enhance the global environmental sustainability.

Certification for car Application

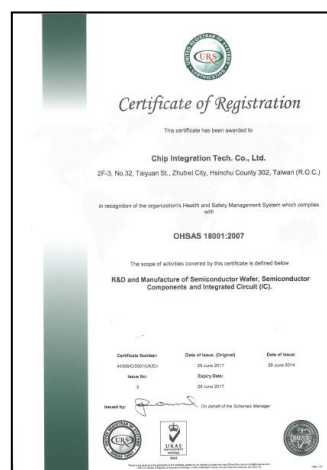
Our factory has passed ISO-9001, ISO-14001, ISO-45001, IATF-16949 certification, and automotive electronic products are certified by AEC-Q101 to ensure the highest quality products.



ISO-9001



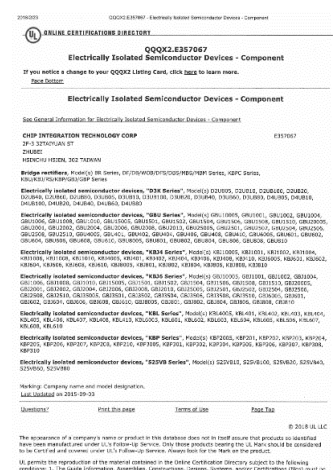
ISO-14001



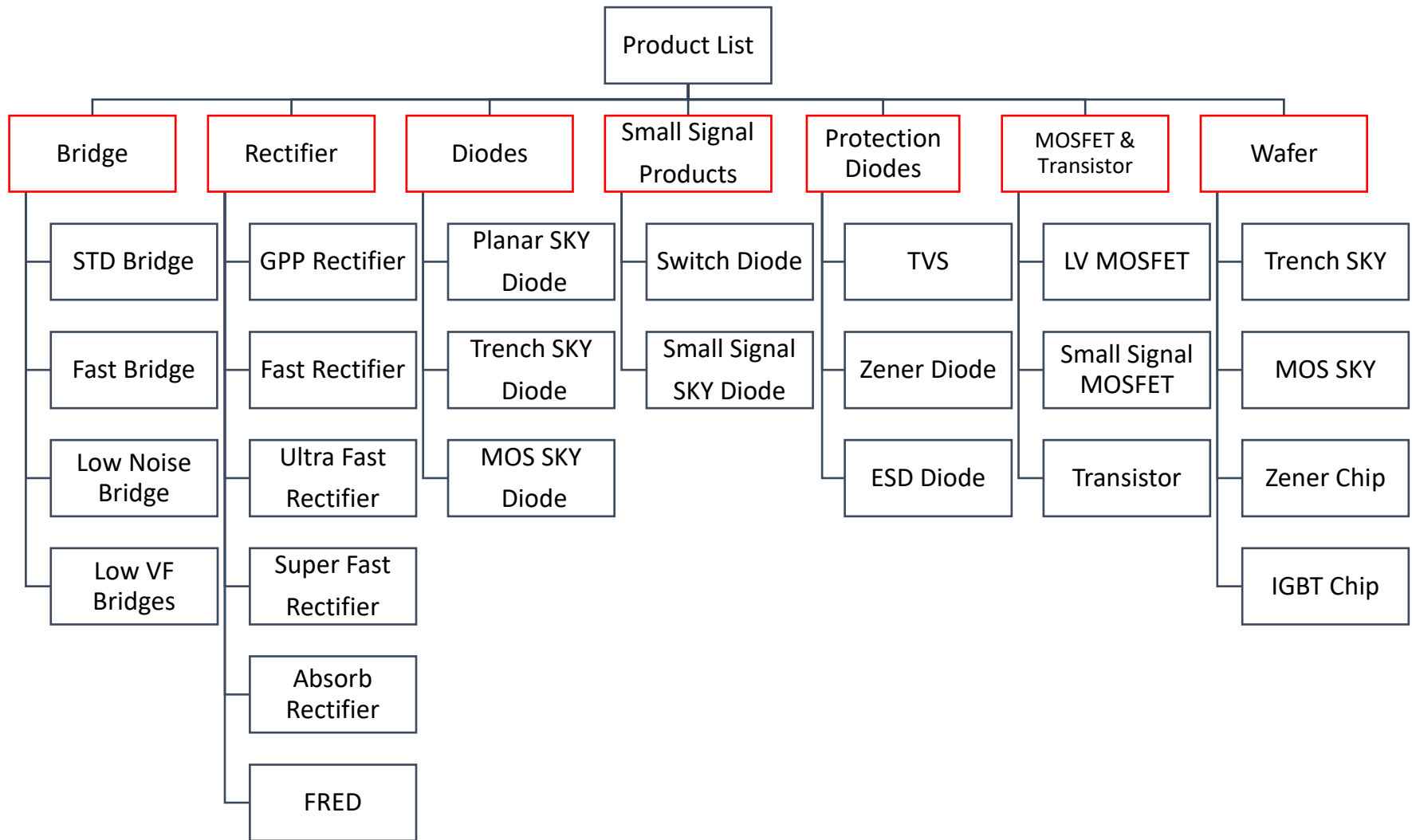
OHSAS-18001



TS-16949



U L



CITC provides the following automotive general electronic components, all of which have passed TS-16949 and AEC-Q101 certification

Product	IO	VR	Package	Application
Rectifier	1A~5A	50~1000V	SMA 、 SMB 、 SMC	AC-DC Conversion
Schottky Diodes	1A~5A	50~200V	SMA 、 SMB 、 SMC SOD-123 、 SOT-23	Circuit Protection
TVS	400W~6600W	5.0V~600V	SMA 、 SMB 、 SMC DO-218	Surge Voltage Protection
Switch Diodes	0.2~0.5A	30V	SOD-323 、 SOD-523	Switch
Zener Diodes	0.3W	2.4~47V	SOD-323	Voltage Stabilization

Schottky diodes are diodes formed by combining semiconductors with metals. A typical silicon diode has a forward voltage of 1100-1700mV, while a Schottky diodes has a forward voltage of 150-900mV. Schottky diodes have lower forward voltage drop and fast switching action, which can be used in higher frequency circuits and result in better system efficiency.

Part Number	IO(A)	VR(V)	VF(Max) @ 25C		IR(Max) @ 25C		Package
			VFM(V)	IFM(A)	IR(μA)	VR(V)	
SK14AGQ-P	1.0	40	0.50	1.0	500	40	SMA
SK16AGQ-P	1.0	60	0.70	1.0	500	60	SMA
SK110AGQ-P	1.0	100	0.85	1.0	100	100	SMA
SK24AGQ-P	2.0	40	0.50	2.0	500	40	SMA
SK26AGQ-P	2.0	60	0.70	2.0	500	60	SMA
SK210AGQ-P	2.0	100	0.85	2.0	100	100	SMA
SK34AGQ-P	3.0	40	0.50	3.0	500	40	SMA
SK36AGQ-P	3.0	60	0.70	3.0	500	60	SMA
SK310AGQ-P	3.0	100	0.85	3.0	100	100	SMA
SK315AGQ-P	3.0	150	0.90	3.0	100	150	SMA
SK320AGQ-P	3.0	200	0.90	3.0	100	200	SMA
SK54AGQ-P	5.0	40	0.60	5.0	500	40	SMA
SK56AGQ-P	5.0	60	0.70	5.0	500	60	SMA
SK510AGQ-P	5.0	100	0.85	5.0	100	100	SMA
SK515AGQ-P	5.0	150	0.90	5.0	100	150	SMA
SK520AGQ-P	5.0	200	0.90	5.0	100	200	SMA

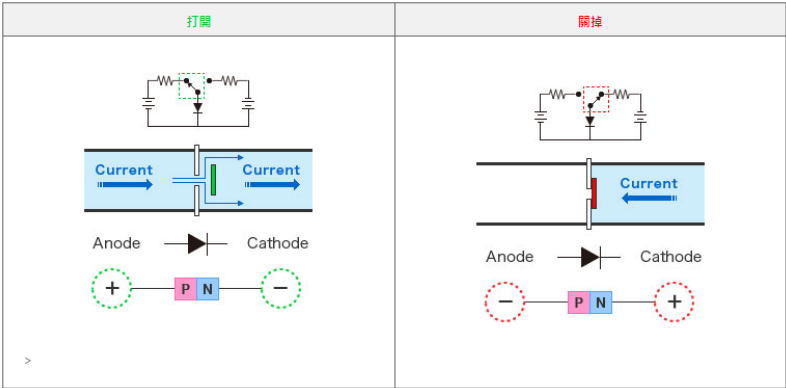
Part Number	IO(A)	VR(V)	VF(Max) @ 25C		IR(Max) @ 25C		Package
			VFM(V)	IFM(A)	IR(μA)	VR(V)	
B140WGQ-S	1.0	40	0.50	1.0	500	40	SOD-123S
B160WGQ-S	1.0	60	0.70	1.0	500	60	SOD-123S
B1100WGQ-S	1.0	100	0.85	1.0	100	100	SOD-123S
B240WGQ-S	2.0	40	0.50	2.0	500	40	SOD-123S
B260WGQ-S	2.0	60	0.70	2.0	500	60	SOD-123S
B2100WGQ-S	2.0	100	0.85	2.0	100	100	SOD-123S
B2150WGQ-S	2.0	150	0.90	2.0	100	150	SOD-123S
B2200WGQ-S	2.0	200	0.90	2.0	100	200	SOD-123S

Switching diodes are suitable for switching small signals up to 100 mA and can be used as rectifiers. In contrast, rectifier diodes are used to rectify AC lines (from AC to DC). Switching diodes are designed to handle voltages below a few tens of volts. Those in small surface mount packages are widely used.

- 1. Suitable for various switch applications
- 2. 2. High switching speed
- 3. 3. Very low capacitance

Key applications

General switches, ultra-high speed switches



Part Number	IO	VRRM	VF	IR	IFSM	Package
	(A)	(V)	(V)	(uA)	(A)	
RB521SGQ	0.2	30	0.5	30	1	SOD-523
RB551VGQ	0.5	30	0.47	100	2	SOD-323

Rectifiers allow current to flow in only one direction and are primarily used in power supply operations. Rectifier diodes can handle higher currents than regular diodes and are commonly used to convert alternating current (AC) to direct current (Dc).

Part Number	IO(A)	VR(V)	VF(Max) @ 25C		IR(Max) @ 25C		I _{FSM} A	Package
			VFM(V)	IFM(A)	IR(uA)	VR(V)		
GS1AGQ-P	1	50	1.1	1	5	50	40	SMA
GS1BGQ-P	1	100	1.1	1	5	100	40	SMA
GS1DGQ-P	1	200	1.1	1	5	200	40	SMA
GS1GGQ-P	1	400	1.1	1	5	400	40	SMA
GS1JGQ-P	1	600	1.1	1	5	600	40	SMA
GS1KGQ-P	1	800	1.1	1	5	800	40	SMA
GS1MGQ-P	1	1000	1.1	1	5	1000	40	SMA

Transient voltage suppression (TVS) diodes are electronic components used to protect electronic components from voltage spikes induced on connecting lines. When the induced voltage exceeds the avalanche breakdown voltage, the device operates by shunting the excess current. It is a clamping device that suppresses all voltages above its breakdown voltage. It automatically resets when the overvoltage disappears, but absorbs far more transient energy internally than similarly rated crowbar devices.

Part No.	PD	Reverse Stand-off Voltage	Test Current	Max Clamping Voltage @ IPP		Max Reverse Leakage Current	Package
		VRWM	IT	VC	IPP	IR @V RWM	
	W	Volts	mA	Volts	A	uA	
P4SMAq Series	400	10.2~185	1	16.7~328	35.9~1.8	1~5	SMA
P6SMBQ Series	600	10.2~185	1	16.7~328	24~1.2	1~5	SMB
SMCJQ Series	1500	10~190	1	17~307.8	4.9~88.2	1~5	SMC
3.0SMCJQ Series	3000	10~43	1	17~69.4	176.4~43.2	1~5	SMC
SD5S33A~36A	3600	33~36	5	53.3~581.	62~68	0.5	DO-218
SM8S10A~43A	6600	10~43	5	17~69.4	95.1~388	10~15	DO-218

Zener diode is an electronic component made by utilizing the Zener effect of a diode under reverse bias operation. Because of its voltage stabilizing function, it is also called regulator diode. The forward bias voltage of Zener diodes is the same as that of ordinary diodes, but its reverse breakdown voltage range is much larger than that of ordinary diodes, and it can withstand higher voltages than ordinary diodes, and Zener diodes The reverse voltage operation is reversible. Common Zener voltages range from 3 volts to 100 volts.

Key applications

Surge suppressor, switching signal, voltage reference, voltage regulator, voltage converter, waveform limiter

Type Number	V _z at I _{zt} (V)	I _{zt}	Z _{zt} (Ω)		Z _{zk} (Ω)		I _R (μA)@V _R	
	typ.	mA	I _{Zt} (mA)	max.	I _{zk} (mA)	max.	uA	V _R (V)
BZT52CXXXSGQ	2.4~47	2~5	2~5	10~100	0.5~1	80~600	0.1~50	1~35

Daytime Running Lights

TVS 、 Zener Diodes
Schottky Diodes 、 Switch Didoes
Transistors
MOSFETs

Automotive Networking

ESD Diodes
TVS 、 Zener Didoes
Switch Didoes

Powertrain

Trench Schottky Diodes
MOS Schottky Diodes
TVS

Interior Light

Schottky Diodes
MOSFETs 、 Transistors
Switch Didoes

Body Control Module

ESD Diodes
TVS 、 Zener Didoes
Transistors 、 MOSFETs

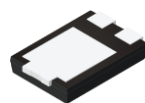
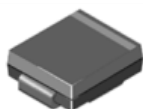
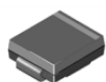
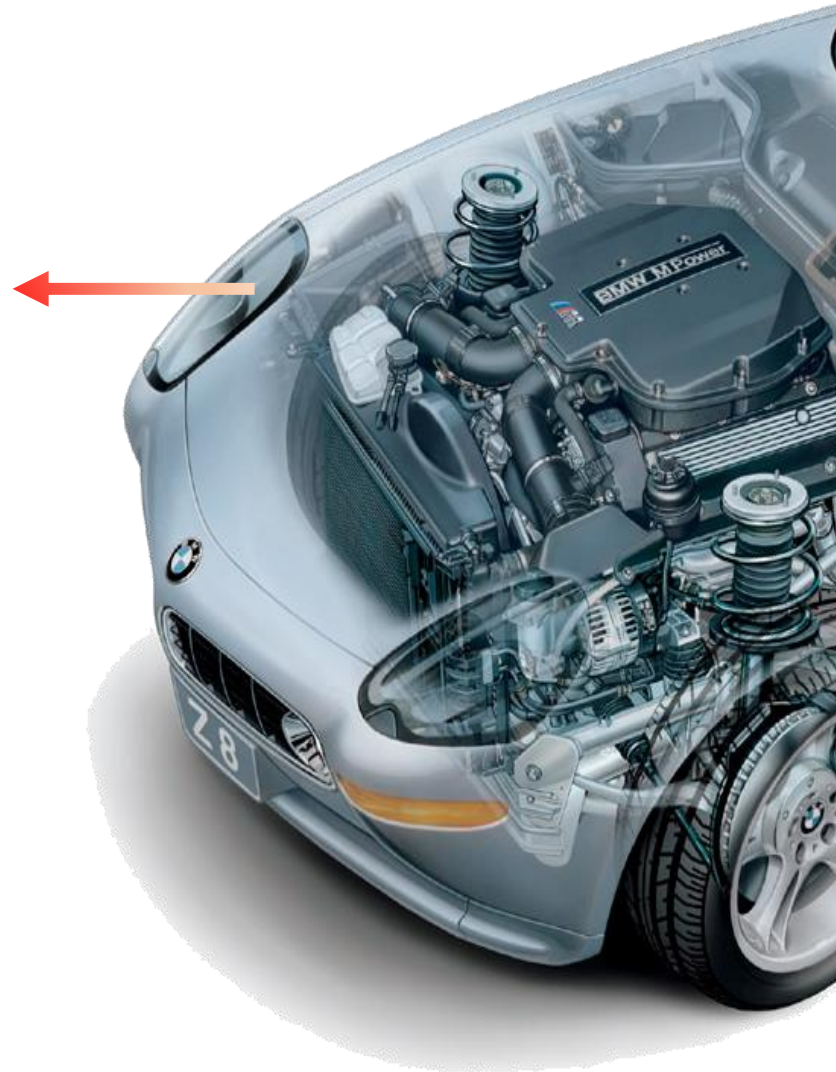
Seat Control Module

TVS Protection Diodes
Trench Schottky Diodes
MOS Schottky Diodes
Switch Didoes



CITC material parts have been used in the U.S. tour bus headlights, Honda car headlights and automotive headlight markets.

PN	Io (A)	VB (V)	Package	Application
SK36AG	3	60	SMA	Car light
SK36BG	3	60	SMB	Car light
SK54AG	5	40	SMA	Car light
EP460SG	4	600	TO-277B	Car light
EP660SG	6	600	TO-277B	Car light
SK510BG	5	100	SMB	HONDA Car light
SK520BG	5	200	SMB	HONDA Car light
CP10H100SG	10	100	TO-277B	Bus Car light



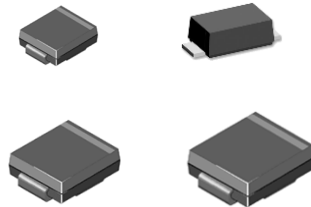
CITC has complete product reliability testing equipment to check products for all customers, ensuring that all factory components have the highest product quality level.

Equipment includes: wafer testing equipment, finished product electrical testing equipment, electrostatic testing equipment, thermal resistance testing equipment, HTRB testing equipment, high-magnification microscopes, oscilloscopes, temperature testers...





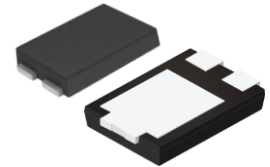
SOD-123 ~ 923



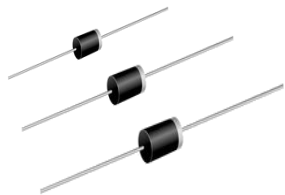
SMA / SMB / SMC



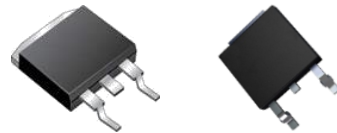
SOT-23/363



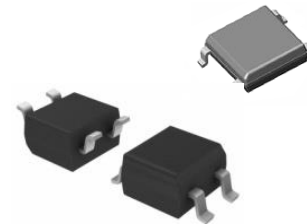
TO-277



DO-41 / DO-15 / DO-27



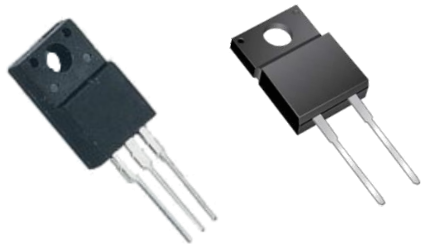
TO-263 / TO-252



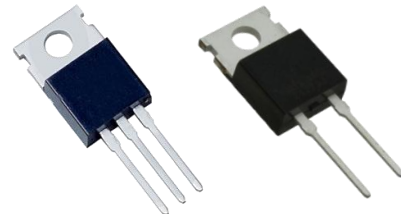
ABS / MDS



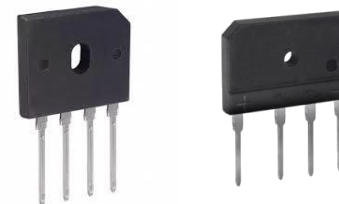
DF / DFS



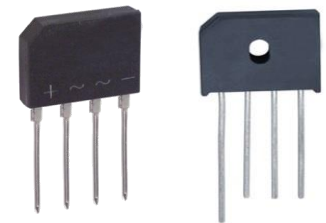
ITO-220AB / ITO-220AC



TO-220AB / TO-220AC



GBU / GBJ



KBP / KBU



2F-3, No.32, Taiyuan St., Zhubei City,
Hsinchu County 302, Taiwan R.O.C.

TEL: 886-3-5600628

Sales@citcorp.com.tw

<https://www.citcorp.com.tw>

Thank you for your attention.

If you need more information and technical supports of CITC, please contact us by email or phone call.

We are glad to service and reply you.