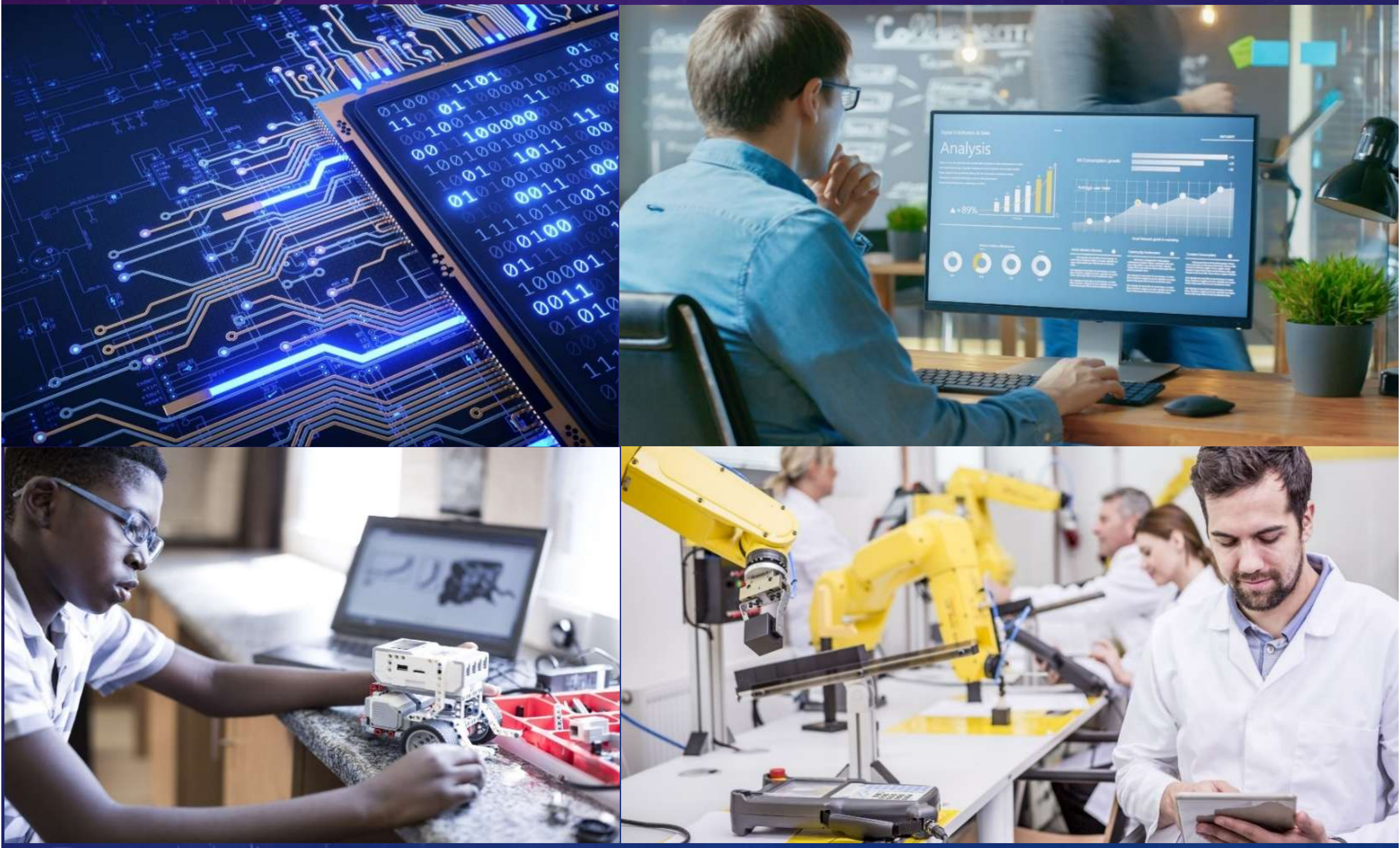
IceMOS Technology

High Voltage

Super Junction MOSFETs Product Brochure



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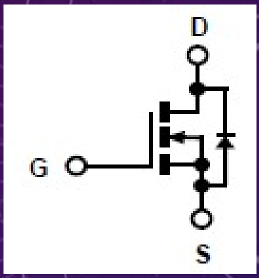
Features of Super Junction MOSFET:

- ☑ High Voltage
- ☑ Low On-Resistance
- ☑ Ultra Low Gate Charge
- ☑ High dv/dt Capability
- ☑ High UIS capability
- ☑ High peak current capability
- ☑ Increased transconductance performance



Application:

- ☑ Power Supplies
- ☑ IT hardware : data center, servers, cloud, laptops, tablets
- ☑ Lighting: HID lamp and LED lamp
- ☑ LED TV drivers and power supplies
- ☑ Electric and hybrid cars
- ☑ Solar Inverters
- ☑ Chargers, UPS

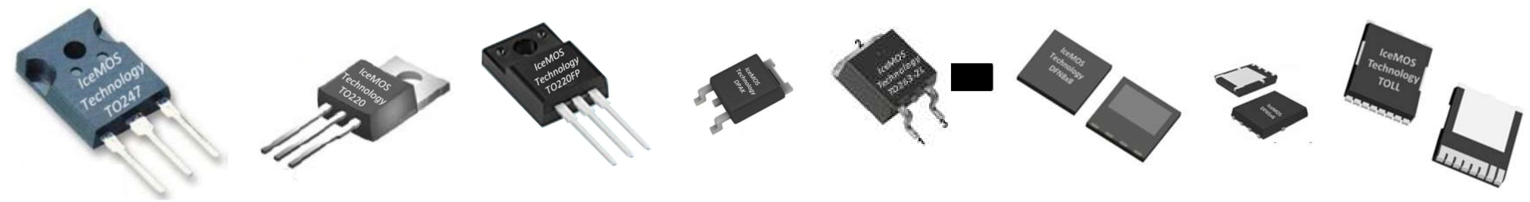
Package:

- ☑ Compliant RoHS (EU)2015/863
- ☑ Lead Free (Pb free) ＊
- ☑ Halogen Free
- ☑ Green Mold

RoHS COMPLIANT RoHS (EU) 2015/863

Pb free

HALOGEN FREE



TO247 TO220 TO220FP DPAK D2PAK DFN8x8 DFN5x6 TOLL

We can provide a wafer form.

About Super Junction produt

IceMOS Super Junction MOSFET is manufactured through our partner factories using IceMOS's proprietary MEMS TRENCH process. With over twenty years of expertise, IceMOS ensures outstanding customer support. The Super Junction MOSFET can be applied in any power supply application and encourages energy savings as a key component. It is suitable for systems that require long life, high efficiency, small size, and high reliability.

Guidelines for Handling our SJ MOSFET

1. Soldering Temperature : Flow /Reflow 260℃,Max 10 sec, 2 times / Iron soldering 380℃,Max 3 sec,1 time
2. Shelf Life Guideline: Packaged product 5 years Wafer form 3 years
3. Avoid sudden temperature changes and store at a Temp 5～35℃ and a humidity of 20～75%RH The moisture Sensitive Level of TO220,TO220FP and TO247 is MSL1. DPAK,D2PAK,DFN8x8 and DFN5x6 is MSL3.
4. Keep away from corrosive, chloride, excessive weight and direct sunlight . Avoid these conditions for your storage.
5. To prevent ESD damage ,store the product in an ESD-resistant package. When handling the device ground the jig, device, bench etc.
6. Our products comply with RoHS and REACH. We do not use any minerals from conflict zones

Super Junction MOSFETs

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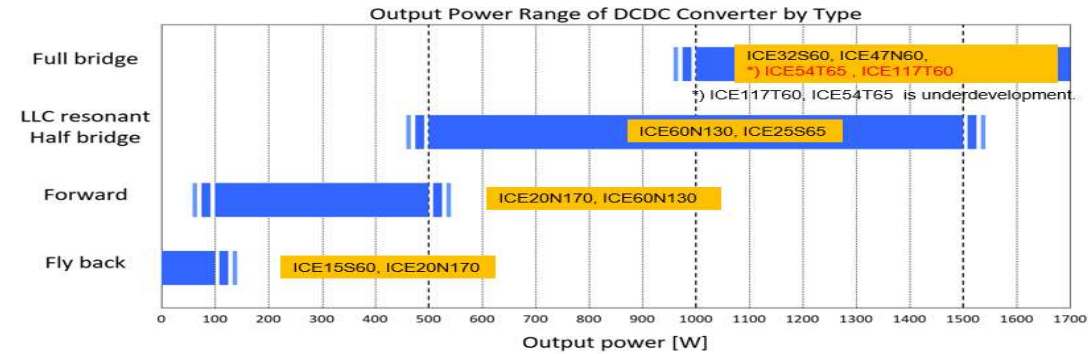
GEN	Product	BVDSS Min. (V)	ID Max. (A)	RDSON Max. (Ω)	Qg Typ. (nC)	FOM (Ω· nC)	IAR (A) Avalanche Current	Package *Pbfree TO=TO220* FP=Full Pak* W=TO247* D=TO252 L=DFN88 ,LK=DFN56 B=TO263 T=TOLL C=Wafer*
1	ICE47N60	600	47	0.068	189	12.85	20	W,C
	ICE60N130	600	25	0.15	84	12.60	11.5	TO,FP,W,C,B
	ICE22N60	600	22	0.16	84	13.44	11	TO, B ,W, T
	ICE20N170	600	20	0.199	59	11.74	10	TO,FP,W,C,B,T
	ICE20N60	600	20	0.19	59	11.21	10	TO,FP,W,B,C,T
	ICE19N60	600	19	0.22	59	12.98	9.5	L8x8
	ICE15N73	730	15	0.35	75	26.25	7.5	TO,FP,W ,T
	ICES15N60	600	15	0.24	52	12.48	9.5	TO,FP,L8x8,B,T
	ICE13N60	600	13	0.27	48	12.96	9	TO,FP,L8x8,B,T
	ICE11N70	700	11	0.25	84	21.00	5	TO,FP,W,B,C ,T
	ICE10N60	600	10	0.33	43	14.19	5	TO,FP,W,B,L8x8,T
	ICES10N60	600	10	0.36	40	14.40	7	D
	ICE8N60	600	8	0.52	32	16.64	6	TO,FP,W,B,L8x8, T,D,LK
2	ICE32S60	600	32	0.078	47	3.67	10	TO,FP,W,C,T
	ICE25S65	650	25	0.133	34	4.52	8	TO,FP,W,C,B, T
	ICE24S65	650	24	0.141	34	4.79	8	L8x8
	ICE15S60	600	15	0.175	30	5.25	5	TO,FP,W,C,B ,T
	ICE14S65	650	14	0.195	24	4.68	5	TO,FP,W,C,B ,T
	ICE8S65	650	7.8	0.4	11.5	4.60	2.7	TO,FP,W,B,C,D,LK56,T

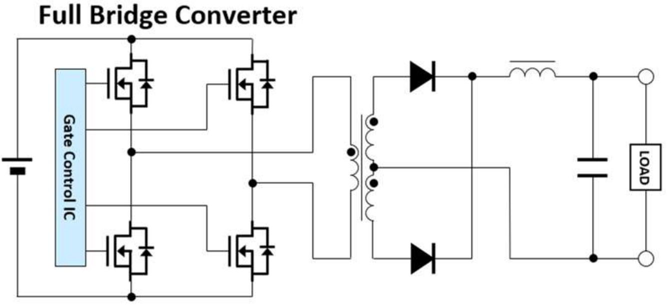
GEN1 series
Cost merit
robust UIS

GEN2 series
Release 2023.
Low Figure of
merit Low
gate charge.

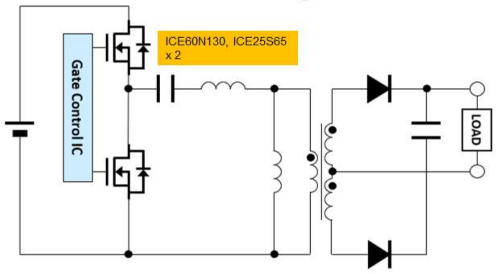


Adoption case:
HID light ballast,
Street Light,
Power Supply
Unit,
ATX 600W,
SMPS ,
ATE 420W etc.

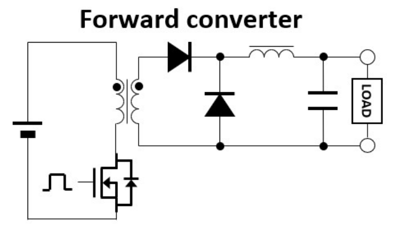
Application example



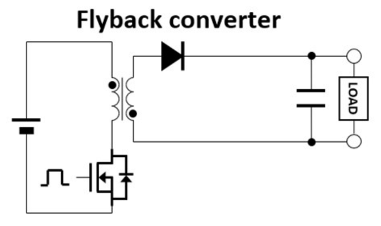
ICE47N60,ICE32S60 4pcs



ICE60N130,
ICE25S65 2pcs



ICE20N170,ICE60N130 , 1 pcs



ICE8S65, ICE8N60
ICE10N60,ICE13N60,ICE15S60, 2pcs

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Application Matrix

★:Displays the circuit used for each application

#	Application	Output Power (W)		Circuit								ICEMOS Product
				AC-DC			DC-DC				DC-AC	
		Min	Max	Half wave	Full Wave1	Full Wave2	Fly back	For ward	LLC Half Bridge	Full Bridge	Inverter	
1	SMPS Power Factor Correction	500							★	★		ICE25S65 ICE60N130
2	LLC Half Bridge	1000								★		ICE47N60 ICE32S60
3	Low power SMPS Quasi- Resonant Flyback		100				★					ICE8S65,ICE8N60, ICE10N60,ICE15S60
4	High Power SMPS LLC Half- Bridge	500	1500						★			ICE47N60 ICE32S60
5	ATXPower Supplies	200	1600	★	★	★	★	★	★			ICE47N60 ICE32S60
6	LED TV	5k-140inch				★				★		ICE32S60 ICE47N60
7	LED Lighting	20	500	★	★	★	★	★				ICE25S65 ICE60N130
8	Data center AC/DC(Severs and Telecom)	500k-1k node				★				★		ICE32S60 ICE47N60
9	Fast Chargers	3k	400k			★				★		ICE47N60
10	Chargers PC Adapters	36	90	★	★		★					ICE8S65,ICE8N60, ICE10N60,ICE15S60
11	TV Power application	24	410		★	★	★	★				ICE25S65 ICE60N130
12	UPS	500	10k			★			★	★	★	ICE32S60 ICE47N60
13	Solar inverters	300	6k					★	★	★	★	ICE32S60 ICE47N60
14	HID Street lights	22	500			★		★	★			ICE25S65 ICE60N130
15	Gaming consoles	100	200		★	★		★				ICE60N130 ICE20N170
16	LED signage	10	250	★	★			★				ICE60N130 ICE20N170
17	E bikes E-Mobility	600	40k			★			★	★		ICE32S60 ICE47N60
18	Printers	10	1500	★	★	★	★	★	★	★		ICE32S60 ICE47N60
19	White good Fridge	200	300			★			★	★	★	ICE60N130 ICE20N170
20	Washing machine	800	1500			★			★	★	★	ICE32S60 ICE47N60
21	Audio Amp	200 x n	5k x n			★			★	★		ICE32S60 ICE47N60
22	Projector	300	2k			★		★	★	★		ICE32S60 ICE47N60
23	Car audio	10 x n	100xn				★	★				ICE47N60 ICE32S60
24	Navigation	10	20				★					ICE8S65,ICE8N60, ICE10N60,ICE15S60
25	3D printer	180	1500	★	★	★	★	★	★	★		ICE32S60 ICE47N60
26	Smart phone adaptors	20	90	★	★		★					ICE15S60 ICE20N170
27	Factorized power	320	1300			★			★	★		ICE47N60
28	Tablet computers	200	1500	★	★		★					ICE15S60 ICE20N170
29	Micro Inverters	200	1500						★	★	★	ICE47N60

Icemos Technology Corporation

CEO: Samuel Anderson
Founded: 2004, Privatily held

Arizona, USA : Head office
Belfast, UK: SOI Wafers &
Advanced Engineering Substrates.
Tokyo, Japan: SJMOSFET unit

Quality System: ISO9001, ISO14001, IATF16949

◆ MOSFET is designed by our R&D engineers with over 25 years experience.

◆ IceMOS is a leading company in Super Junction MOSFETs, promoting safety and high efficiency in electronic products.

◆ IceMOS owns intellectual property with 70 granted cases and has applied effective process licenses and technologies based on this IP.

Sales inquiries: sales@icemostech.com