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ROHM SEMICONDUCTOR

Contributes to greater energy savings in inverter-equipped AC systems

600V Super Junction PrestoMOS™ MOSFETs

R60xxJNx series

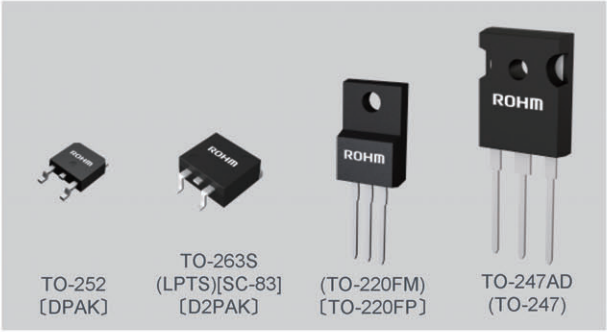
Achieves the industry's fastest* reverse recovery time (trr)

Reduces power loss at light loads by half

Lower self-turn ON further deceases power consumption

Improved recovery index prevents malfunctions due to noise

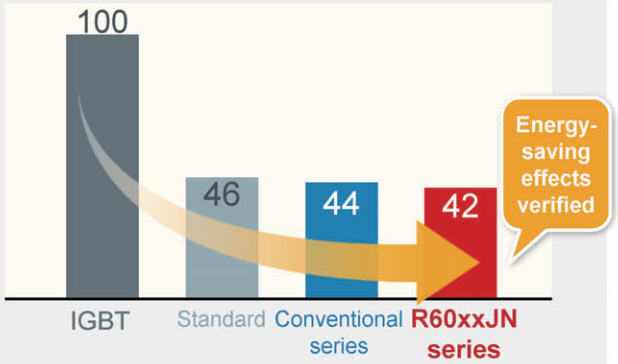
*ROHM February 2020 study



Note: Indicates the JEDEC package notation.
( ) denotes ROHM package type, [ ] JEITA code, 〔 〕General code.

■ Reduces power loss at light loads by half

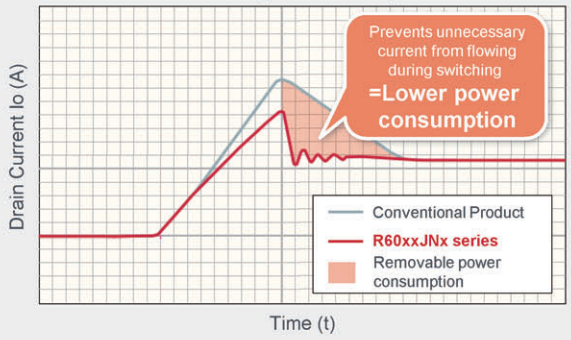
Comparison of Inverter Power Supply Loss in Energy Efficient ACs at Light Loads



Original Lifetime Control Technology reduces power loss by half at light loads compared with conventional IGBTs.

■ Contributes to even lower power consumption

Switching Loss Comparison

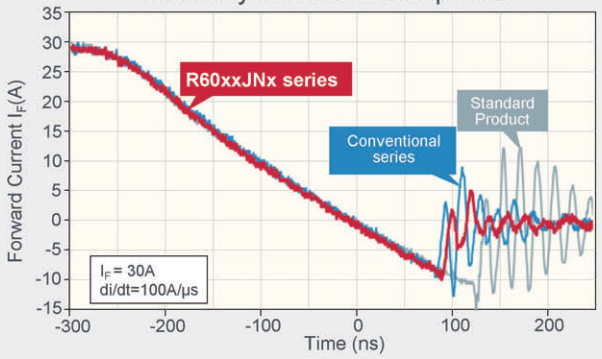


Measures to reduce self turn-ON

Optimized parasitic capacitance reduces unintended gate voltage during switching by 20%. As a result, the voltage threshold (Vth) required to turn the MOSFET ON has been increased by about 1.5x.

■ Prevents noise-induced malfunctions

Recovery Waveform Comparison



Improved soft recovery index

Optimizing the internal diode structure improves the soft recovery index by 30% over conventional products. This makes it possible to reduce noise while maintaining the industry's fastest* reverse recovery time (trr), minimizing the customer's design load.

*ROHM February 2020 study

R60xxJNx series PrestoMOS™ Lineup

Package	Part No.	Polarity (ch)	V_{DSS} (V)	I_D (A)	P_D(W) (T_C=25°C)	$R_{DS(on)}$(Ω) V_{GS}=15V Typ	$R_{DS(on)}$(Ω) V_{GS}=15V Max	Qg Typ(nC) V_{GS}=15V	trr Typ (ns)
TO-252 〔DPAK〕	R6009JND3	N	600	9	125	0.450	0.585	22	65
	R6007JND3			7	96	0.600	0.780	17.5	60
	R6006JND3			6	86	0.720	0.936	15.5	58
	R6004JND3			4	60	1.100	1.430	10.5	45
TO-263S (LPTS) [SC-83] 〔D2PAK〕	R6020JNJ	N	600	20	252	0.200	0.260	50	85
	R6018JNJ			18	220	0.220	0.286	42	80
	R6012JNJ			12	160	0.300	0.390	28	70
	R6009JNJ			9	125	0.450	0.585	22	65
	R6007JNJ			7	96	0.600	0.780	17.5	60
	R6006JNJ			6	86	0.720	0.936	15.5	58
	R6004JNJ			4	60	1.100	1.430	10.5	45
(TO-220FM) 〔TO-220FP〕	New R6030JNX	N	600	30	95	0.110	0.143	74	100
	R6025JNX			25	85	0.140	0.182	57	90
	R6020JNX			20	76	0.200	0.260	45	85
	R6018JNX			18	72	0.220	0.286	42	80
	R6012JNX			12	60	0.300	0.390	28	70
	R6009JNX			9	53	0.450	0.585	22	65
	R6007JNX			7	46	0.600	0.780	17.5	60
	R6006JNX			6	43	0.720	0.936	15.5	58
	R6004JNX			4	35	1.100	1.430	10.5	45
TO-247AD (TO-247)	New R6070JNZ4	N	600	70	770	0.045	0.058	160	135
	New R6050JNZ4			50	615	0.064	0.083	120	120
	New R6042JNZ4			42	495	0.080	0.104	100	110
	New R6030JNZ4			30	370	0.110	0.143	74	100
	New R6025JNZ4			25	306	0.150	0.195	65	90
	New R6020JNZ4			20	252	0.180	0.234	45	85

Note: Indicates the JEDEC package notation. ( ) denotes ROHM package type, [ ] JEITA code, 〔 〕General code.

Applications

- AC
- Refrigerators
- Industrial equipment (i.e. charging stations)

and more...

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The content specified in this document is correct as of February 1st, 2020.

