

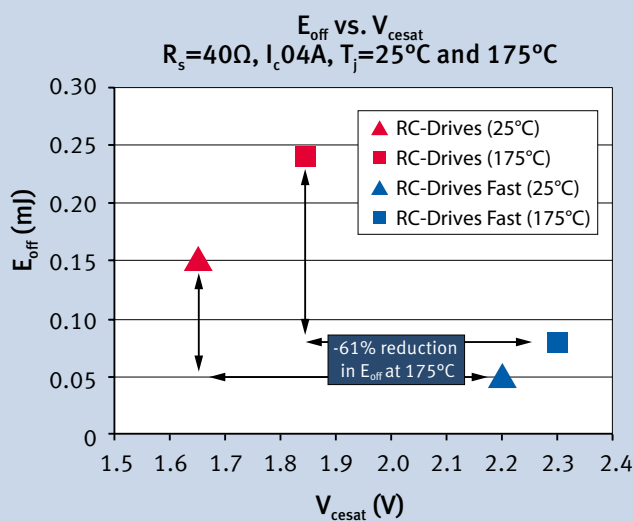
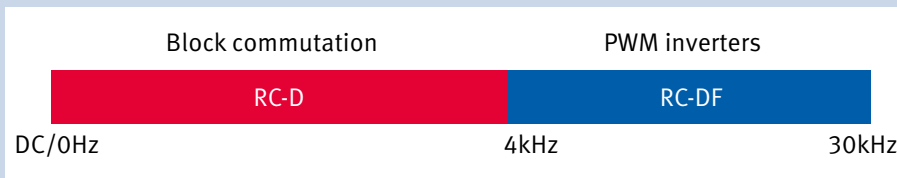


# RC-Drive and RC-Drive Fast

## Cost-Optimized IGBT for Consumer Drive Applications

The RC-Drives IGBT technology is a cost optimized solution for the price-sensitive consumer drivers market that provides outstanding performance for permanent magnet synchronous and brushless DC motor drives.

The new family of reverse conduct RC-Drives Fast were developed to meet rising demand for the low power motor drivers on consumer market. IGBT and diode losses are optimized to reduce losses at frequencies of 4 ~ 30kHz. RC-Drives Fast enables high efficiency designs for inverters above 16kHz to reduce the audible noise to absolutely silent level. Furthermore highly precise vector control techniques can be used to provide more torque in operation at low speed and high performance dynamics in the control at high speed. The small size of the components allows high power density designs with less system costs.



Due to different trade-off between conduction and switching losses, either RC-Drives or RC-Drives Fast can be offered depending on switching frequency.

### Features

- Optimized  $E_{on}$ ,  $E_{off}$  and  $Q_{rr}$  for up to 20% lower switching losses
- Operating range of DC to 30kHz
- Max junction temperature 175°C
- Short circuit capability of 5μs
- Very tight parameter distribution
- Best in class current versus package size performance
- Smooth switching performance leading to low EMI levels
- Complete product portfolio and PSpice Models on the internet

### Benefits

- Excellent cost/performance for hard switching applications
- Outstanding temperature stability
- Very good EMI behavior
- Up to 60% space saving on the PCB
- Higher reliability due to monolithically integrated IGBT & diode due to less thermal cycling during switching

### Applications

- Compressors
- Pumps
- Fans
- Hard switching topologies up to 1.0kW



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## Cost-Optimized IGBT for Consumer Drive Applications

### Product Specifications for RC-Drives and RC-Drives Fast

Partnumber	Package Type	Power [W]	Recomm. Switching Freq.	V <sub>CE</sub> [V]	I <sub>C</sub> [A]		V <sub>CESAT</sub> [V]		E <sub>ts</sub> [mJ]		t <sub>SC</sub> [μs]	V <sub>F</sub> [V]		Q <sub>rr</sub> [μC]	
					25°	100°C	25°C	175°C	25°C	175°C		25°C	175°C	25°C	175°C
IKD03N60RF <small>new!</small>	D-PAK	40..80	4..30 kHz	600	5	2,5	2,2	2,3	0,09*	0,14*	5	2,1	2	0,06*	0,19*
IKD04N60RF <small>new!</small>	D-PAK	80..150	4..30 kHz	600	8	4	2,2	2,3	0,11*	0,19*	5	2,1	2	0,09*	0,26*
IKD06N60RF <small>new!</small>	D-PAK	150..250	4..30 kHz	600	12	6	2,2	2,3	0,18*	0,28*	5	2,1	2	0,16*	0,34*
IKD10N60RF <small>new!</small>	D-PAK	250-600	4..30 kHz	600	20	10	2.2.	2,3	0,35*	0,52*	5	2,1	2	0,27*	0,62*
IKD15N60RF <small>new!</small>	D-PAK	600..1kW	4..30 kHz	600	30	15	2.2.	2,3	0,52*	0,78*	5	2,1	2	0,42*	1*
IKU04N60R	I-PAK	80..150	DC..5 kHz	600	8	4	1,65**	1,85**	0,24	0,4	5	1,7**	1,7**	0,22	0,52
IKD04N60R	D-PAK														
IKU06N60R	I-PAK	150-250	DC..5 kHz	600	12	6	1,65**	1,85**	0,33	0,56	5	1,7**	1,7**	0,37	0,8
IKD06N60R	D-PAK														
IKU10N60R	I-PAK	250-600	DC..8kHz	600	20	10	1,65**	1,85**	0,59	0,93	5	1,7**	1,7**	0,56	1,22
IKD10N60R	D-PAK														
IKU15N60R	I-PAK	600..1kW	DC..8kHz	600	30	15	1,65**	1,85**	0,9	1,25	5	1,7**	1,7**	0,76	1,7
IKD15N60R	D-PAK														

\* Speed Optimization

\*\*Conduction Optimization

For more information visit RC-Drives promo page on [www.infineon.com/rcdf](http://www.infineon.com/rcdf)



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