

Product Brief

600V CoolMOS™ C6/E6 Power MOSFET

Affordable Energy Efficient Power MOSFETs from the Market Leader

CoolMOS™ C6/E6 is Infineon's sixth generation of high voltage power MOSFETs designed according to the revolutionary superjunction (SJ) principle. The new CoolMOS™ C6/E6 series combines our experience as the leading SJ MOSFET supplier with best-in-class innovation. The resulting C6/E6 devices provide all benefits of a fast switching SJ MOSFET while not sacrificing ease of use. C6/E6 achieves extremely low conduction and switching losses and can make switching applications more efficient, more compact, lighter and cooler. Moreover, it has the best cost / performance ratio on the market today. The C6 devices have been optimized for ease of use - the E6 devices have been optimized for highest efficiency in DCM applications.

Key Features

- Low area specific on-state resistance ($R_{on} * A$)
- Low energy storage in output capacitance (E_{oss})
- High body diode ruggedness
- Low reverse recovery charge (Q_{rr})

Key Benefits

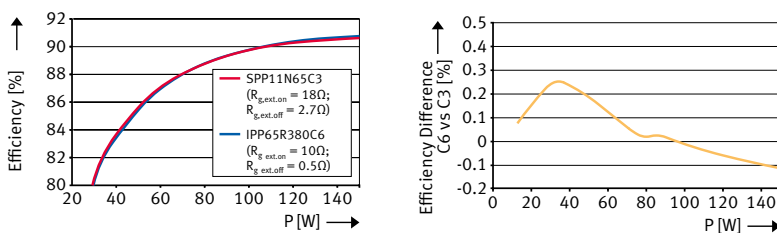
- Easy control of switching behavior
- Better light load efficiency compared to C3
- Proven CoolMOS™ quality combined with high body diode ruggedness guarantee outstanding reliability
- Lower price compared to previous CoolMOS™ generations
- More efficient, more compact, lighter and cooler

Applications

- PFC stages for Server, PC silverbox, LCD & PDP TV, Lighting, Adapter
- PWM stages for Server, PC silverbox, Lighting, Adapter, Solar

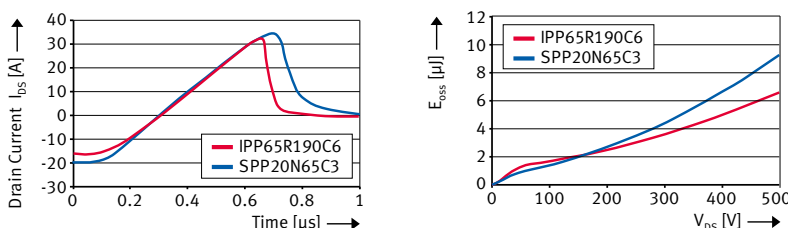


Efficiency comparison CoolMOS™ C6 versus C3:
CCM PFC stage, 550W, AC in 115V, $f_{sw} = 130\text{kHz}$, $R_g = 3.3\Omega$
Relative efficiency difference: C6 up to 0.5% better in light load condition



Ease of use and good efficiency especially in light load conditions make CoolMOS™ C6 the right choice for hard switching applications.

Hard commutation of body diode:
C6 shows less reverse recovery charge than C3 and better softness than CFD



Low energy stored in output capacitance and hard commutation ruggedness make CoolMOS™ C6 the right choice for resonant switching applications.

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600V CoolMOS™ C6 Products

$R_{DS(on)}$ [mΩ]	DPAK (TO-252)	I ² PAK (TO-262)	D ² PAK (TO-263)	TO-220	TO-220 FullPAK	TO-247
3300	IPD60R3K3C6					
2000	IPD60R2K0C6					
1400	IPD60R1K4C6					
950	IPD60R950C6		IPB60R950C6	IPP60R950C6	IPA60R950C6	
600	IPD60R600C6		IPB60R600C6	IPP60R600C6	IPA60R600C6	
520	IPD60R520C6			IPP60R520C6	IPA60R520C6	
380	IPD60R380C6	IPI60R380C6	IPB60R380C6	IPP60R380C6	IPA60R380C6	
280		IPI60R280C6	IPB60R280C6	IPP60R280C6	IPA60R280C6	IPW60R280C6
190		IPI60R190C6	IPB60R190C6	IPP60R190C6	IPA60R190C6	IPW60R190C6
160			IPB60R160C6	IPP60R160C6	IPA60R160C6	IPW60R160C6
125			IPB60R125C6	IPP60R125C6	IPA60R125C6	IPW60R125C6
99			IPB60R099C6	IPP60R099C6	IPA60R099C6	IPW60R099C6
70						IPW60R070C6
41						IPW60R041C6

600V CoolMOS™ E6 Products

$R_{DS(on)}$ [mΩ]	DPAK (TO-252)	TO-220	TO-220 FullPAK	TO-247
750	IPD60R750E6	IPP60R750E6	IPA60R750E6	
600	IPD60R600E6	IPP60R600E6	IPA60R600E6	
520		IPP60R520E6	IPA60R520E6	
450	IPD60R450E6	IPP60R450E6	IPA60R450E6	
380		IPP60R380E6	IPA60R380E6	
280		IPP60R280E6	IPA60R280E6	IPW60R280E6
190		IPP60R190E6	IPA60R190E6	IPW60R190E6

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