



500V CoolMOS™ CE Power MOSFET

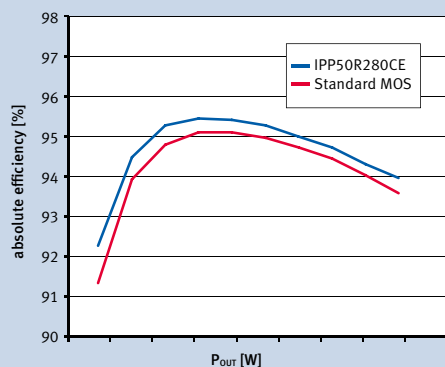
The CoolMOS™ CE is a new technology platform of Infineon's market leading high voltage power MOSFETs designed according to the revolutionary superjunction (SJ) principle.

500V CE portfolio provides all benefits of a fast switching SJ MOSFET while not sacrificing ease of use. As the complete CE series, devices achieve extremely low conduction and switching losses and can make switching applications more efficient, more compact, lighter and cooler.

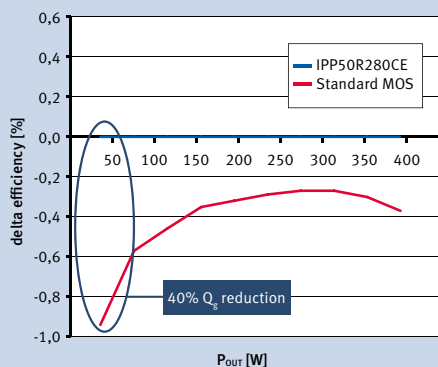
Efficiency comparison 500V CoolMOS™ CE vs competitor standard MOSFET

CCM PFC stage, 90VAC up to 400W

IPP50R280CE vs. Standard MOS
 efficiency @ $V_{IN}=90VAC$; plug&play scenario;
 $R_{g,ext}=5\Omega$; $f=100kHz$; $V_{out}=400VDC$



IPP50R280CE vs. Standard MOS
 delta efficiency @ $V_{IN}=90VAC$; plug&play scenario;
 $R_{g,ext}=5\Omega$; $f=100kHz$; $V_{out}=400VDC$



Features

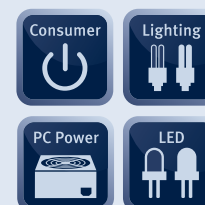
- Reduced energy stored in output capacitance (E_{oss})
- High body diode ruggedness
- Reduced reverse recovery charge (Q_{rr})
- Reduced gate charge (Q_g)

Benefits

- Easy control of switching behavior
- Improved light load efficiency compared to previous CoolMOS™ generations
- Cost attractive alternative compared to standard MOSFETs
- Outstanding reliability with proven CoolMOS™ quality combined with high body diode ruggedness

Applications

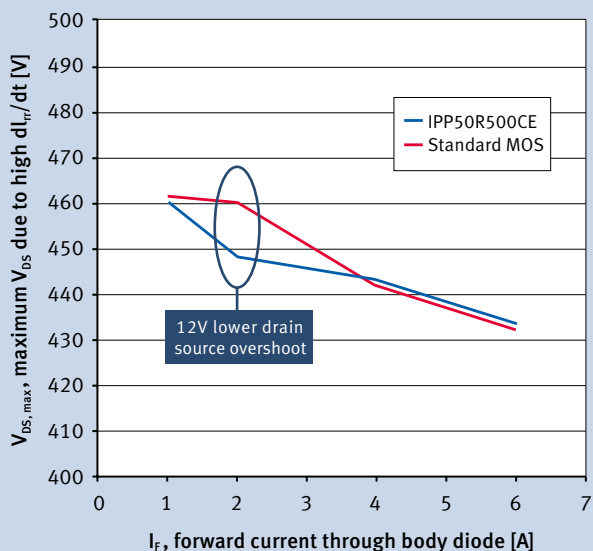
- Consumer
- Lighting
- PC Silverbox



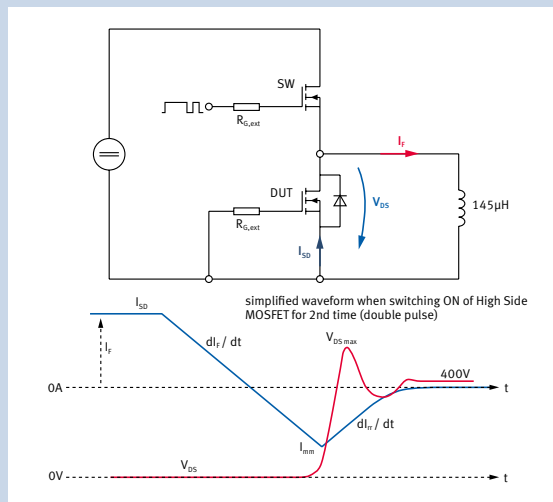
500V CoolMOS™ CE Power MOSFET

IPP50R500CE vs. Standard MOS

hard commutation on conducting body diode; half bridge configuration
High Side MOS = Low Side MOS, same $R_{\text{DS(on)}}$ = 5Ω



Simplified test circuit



- From $I_F=1$ to $I_F=4A$ better behaviour observed of 500V CE
- $I_F > 4A$ same behaviour
- Body diode conduction $< 2\mu s$ before turn-off

Product Portfolio CoolMOS™ CE



$R_{DS(on)}$	TO-220 FullPAK	TO-252 DPAK	TO-220	TO-247	IPAK
3000 mΩ		IPD50R3k0CE*			IPU50R3k0CE*
2000 mΩ		IPD50R2k0CE**			IPU50R2k0CE**
1400 mΩ		IPD50R1k4CE*			IPU50R1k4CE*
950 mΩ	IPA50R950CE	IPD50R950CE			IPU50R950CE*
800 mΩ	IPA50R800CE*	IPD50R800CE*			
650 mΩ	IPA50R650CE*	IPD50R650CE*			
500 mΩ	IPA50R500CE	IPD50R500CE	IPP50R500CE		
380 mΩ	IPA50R380CE*	IPD50R380CE*	IPP50R380CE*		
280 mΩ	IPA50R280CE	IPD50R280CE	IPP50R280CE	IPW50R280CE	
190 mΩ	IPA50R190CE*		IPP50R190CE*	IPW50R190CE*	
Applications	Consumer	Consumer, Lighting	PC Silverbox	PC Silverbox	SSL: Solid State Lighting

* Samples available by Q3 / 2012

** Samples available by Q4 / 2012

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