



# THE DATASHEET OF IPA50R950CEXKSA2





# 500V CoolMOS™ CE Power MOSFET

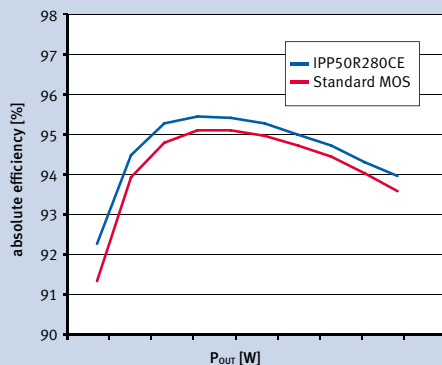
The CoolMOS™ CE is a new technology platform of Infineon's market leading high voltage power MOSFETs designed according to the revolutionary superjunction (SJ) principle.

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.

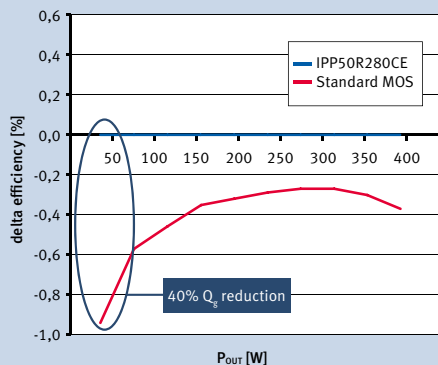
## Efficiency comparison 500V CoolMOS™ CE vs competitor standard MOSFET

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

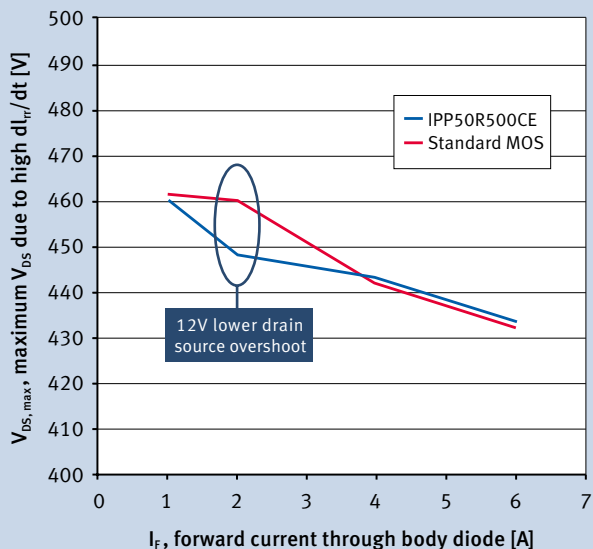
- Consumer
- Lighting
- PC Silverbox



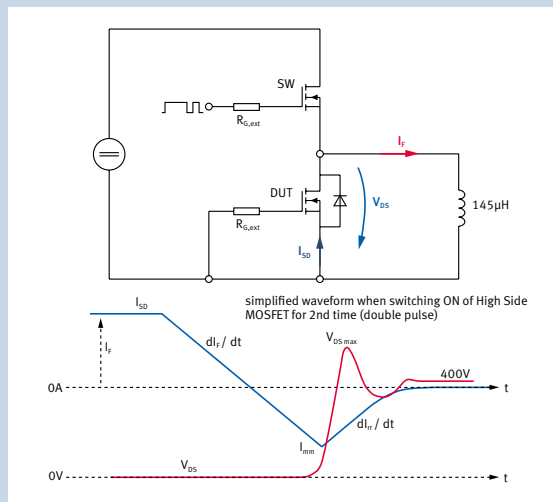
# 500V CoolMOS™ CE Power MOSFET

## IPP50R500CE vs. Standard MOS

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



## 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 m $\Omega$		IPD50R3k0CE			IPU50R3k0CE
2000 m $\Omega$		IPD50R2k0CE			IPU50R2k0CE
1400 m $\Omega$		IPD50R1k4CE			IPU50R1k4CE
950 m $\Omega$	IPA50R950CE	IPD50R950CE			IPU50R950CE
800 m $\Omega$	IPA50R800CE	IPD50R800CE			
650 m $\Omega$	IPA50R650CE	IPD50R650CE			
500 m $\Omega$	IPA50R500CE	IPD50R500CE	IPP50R500CE		
380 m $\Omega$	IPA50R380CE	IPD50R380CE	IPP50R380CE		
280 m $\Omega$	IPA50R280CE	IPD50R280CE	IPP50R280CE	IPW50R280CE	
190 m $\Omega$	IPA50R190CE		IPP50R190CE	IPW50R190CE	
Applications	Consumer	Consumer, Lighting	PC Silverbox	PC Silverbox	SSL: Solid State Lighting

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