C3M0280090D
Transition Guide

Wolfspeed SEPTEMBER 2024

900/1000V → 1200V TRANSITION

- Transitioning to 1200V class devices provides:
  - Increased $R_{DS(ON)}$ options
  - Increased package options
  - Improved availability and lead times
  - Broader range of applications supported
  - Increased scalability across power levels
- Comparable 1200V products offer potential drop-in solutions for existing designs

SUGGESTED REPLACEMENT OPTION 1: CONDUCTION LOSS DOMINATED DESIGNS

	C3M0280090D	C3M0160120D	Notes
Status	EOL issued Oct 2024	Active	200mm qualification in process. Samples available October 2024, production available December 2024.
$V_{DS\ max}$ (V)	900	1200	Increased V_{DS} margin
V_{GS} (V)	-4/+15	-4/+15	Compatible gate voltages
I_D (A)	10.2	17	
$R_{DS(ON)}$ (mΩ)	280	160	Significantly lower conduction losses
C_{oss} (pF)	26	39	
C_{iss}/C_{rss}	68	211	Reduced impact of miller capacitance
Q_G (nC)	9.7	38	Increased gate drive power
$R_{G(int)}$ (Ω)	23.5	8	
$R_{\theta JC}$ (C/W)	2.8 (max)	1.29	Reduced thermal impedance
Package	TO-247-3	TO-247-3	Fully Compatible
Pricing		↘	Improved price

This replacement option is suitable for most designs and will result in improved performance for conduction loss dominated applications

All parameters are typical values at 25 °C unless noted

SUGGESTED REPLACEMENT OPTION 2: SWITCHING LOSS DOMINATED DESIGNS

	C3M0280090D	C3M0350120D	Notes
Status	EOL issued Oct 2024	Active	200mm qualification in process. Samples available October 2024, production available December 2024.
$V_{DS\ max}$ (V)	900	1200	
V_{GS} (V)	-4/+15	-4/+15	Compatible gate voltages
I_D (A)	10.2	7.6	
$R_{DS(ON)}$ (mΩ)	280	350	Slightly increased conduction losses
C_{oss} (pF)	26	20	Reduced output capacitance improves switching speed
C_{iss}/C_{rss}	68	101	Reduced impact of miller capacitance
Q_G (nC)	9.7	19	
$R_{G(int)}$ (Ω)	23.5	7	
$R_{\theta JC}$ (C/W)	2.8 (max)	2.5	
Package	TO-247-3	TO-247-3	Fully Compatible
Pricing		→	Competitive price

This replacement option is best for high switching frequency, lower power applications

All parameters are typical values at 25 °C unless noted

NEXT STEPS

- Samples of recommended replacements available through your Wolfspeed sales team, or at our online Sample Center
- Ask any technical questions to your Wolfspeed FAE or through our Power Applications Forum
- Utilize SpeedFit™ to simulate the performance of the recommended replacement devices
  - Keep in mind, dynamic behavior may be different, requiring a different gate resistor value
- The SpeedVal™ Kit evaluation platform may be utilized to compare the performance and switching behavior

THANK YOU