

# C3M0120090J


# 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


	C3M0120090J	C3M0075120J	Notes
Status	EOL issued Oct 2024	Active	Already qualified for production on 200mm
$V_{DS\ max}$ (V)	900	1200	Increased $V_{DS}$ margin
$V_{GS}$ (V)	-4/+15	-4/+15	Compatible gate voltages
$I_D$ (A)	22	30	
$R_{DS(on)}$ (m $\Omega$ )	120	75	Significantly reduced conduction losses
$C_{oss}$ (pF)	48	58	
$C_{iss}/C_{rss}$	138	695	Reduced impact of miller capacitance
$Q_G$ (nC)	18	48	Increased gate drive power
$R_{G(int)}$ ( $\Omega$ )	13	9	
$R_{\theta JC}$ (C/W)	1.5 (max)	1.1 (typ)	Improved thermal impedance
Package	TO-263-7	TO-263-7	Fully Compatible
Pricing			Improved price

This replacement option is best for most designs and will offer improved efficiency and thermal performance for most applications.

All parameters are typical values at 25 °C unless noted

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## SUGGESTED REPLACEMENT OPTION 2: HIGH $F_{SW}$ APPLICATIONS

	C3M0120090J	C3M0160120J	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)	22	17	
$R_{DS(ON)}$ (m $\Omega$ )	120	160	Increased conduction loss
$C_{oss}$ (pF)	48	39	Reduced output capacitance improves switching speed
$C_{iss}/C_{rss}$	138	211	Reduced impact of miller capacitance
$Q_G$ (nC)	18	24	Increased gate drive power
$R_{G(int)}$ ( $\Omega$ )	13	8	
$R_{\theta JC}$ (C/W)	1.5 (max)	1.38	Similar thermal impedance
Package	TO-263-7	TO-263-7	Fully Compatible
Pricing			Improved price

This option may be suitable for applications that are switching loss dominated.

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## 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

A large, stylized grey wolf head logo is positioned in the background, facing right. The logo is composed of several sharp, angular shapes that form the snout, eye, and ear. The text "THANK YOU" is centered over the wolf's snout.

**THANK YOU**