

# C3M0280090J


# 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

	C3M0280090J	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	
$I_D$ (A)	11	17	
$R_{DS(on)}$ (m $\Omega$ )	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)	10	24	Increased gate drive power
$R_{G(int)}$ ( $\Omega$ )	23.5	8	
$R_{\theta JC}$ (C/W)	2.5 (max)	1.38	Reduced thermal impedance
Package	TO-263-7	TO-263-7	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

	C3M0280090J	C3M0350120J	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	
$I_D$ (A)	11	7.2	
$R_{DS(ON)}$ (m $\Omega$ )	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)	10	13	
$R_{G(int)}$ ( $\Omega$ )	23.5	7	
$R_{\theta JC}$ (C/W)	2.5 (max)	2.9	
Package	TO-263-7	TO-263-7	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

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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 graphic of a wolf's head, facing right, serves as a background for the text. The graphic is composed of several overlapping, angular shapes that define the snout, eye, and ear area.

**THANK YOU**