

MITSUBISHI ELECTRIC CORPORATION

APPLICATION NOTE	Prepared by	<i>S. Uchida</i>	Rev	
	Approved by	<i>M. Yamamoto Nov. 1. '02</i>		

CMH5101.doc

**Subject** Performance Curves of CM400DY-12NF

**Contents**

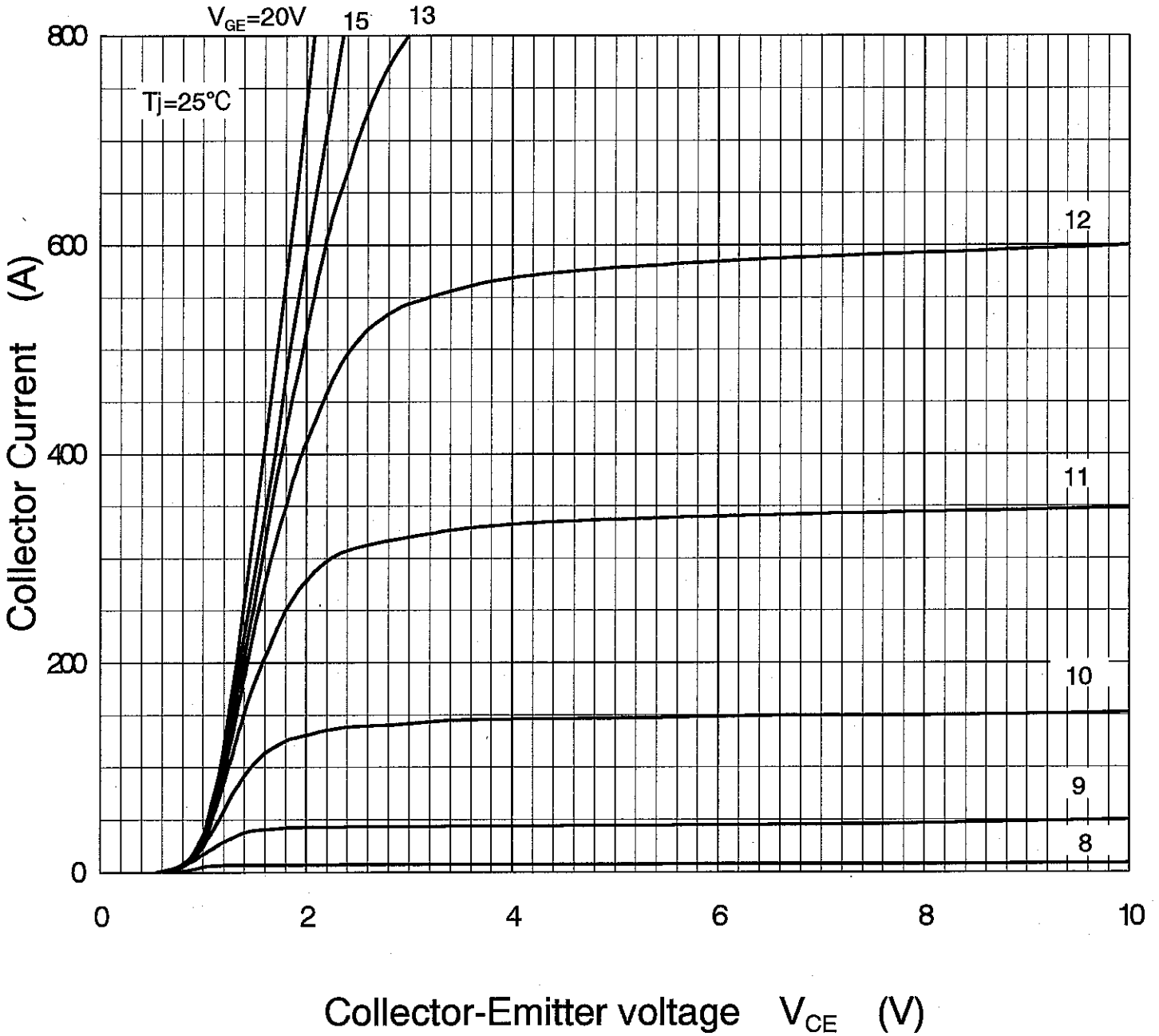
- Output Characteristics(typical)
- Collector-Emitter Saturation Voltage Characteristics(typical)
- Collector-Emitter Saturation Voltage Characteristics(typical)
- Free-Wheel Diode Forward Characteristics(typical)
- Capacitance-VCE Characteristics(typical)
- Half-Bridge Switching Characteristics(typical)
- Reverse Recovery Characteristics of Free-Wheel Diode(typical)
- Transient Thermal Impedance Characteristics(IGBT part&FWDi part)
- Gate Charge Characteristics(typical)

Don't measure these static characteristics yourself by curve tracer.  
Usually, curve tracer has too much wiring inductance and device will be damaged by over voltage from oscillation.

IGBT Module	CMH-5101-	APPLICATION NOTE
-------------	-----------	------------------

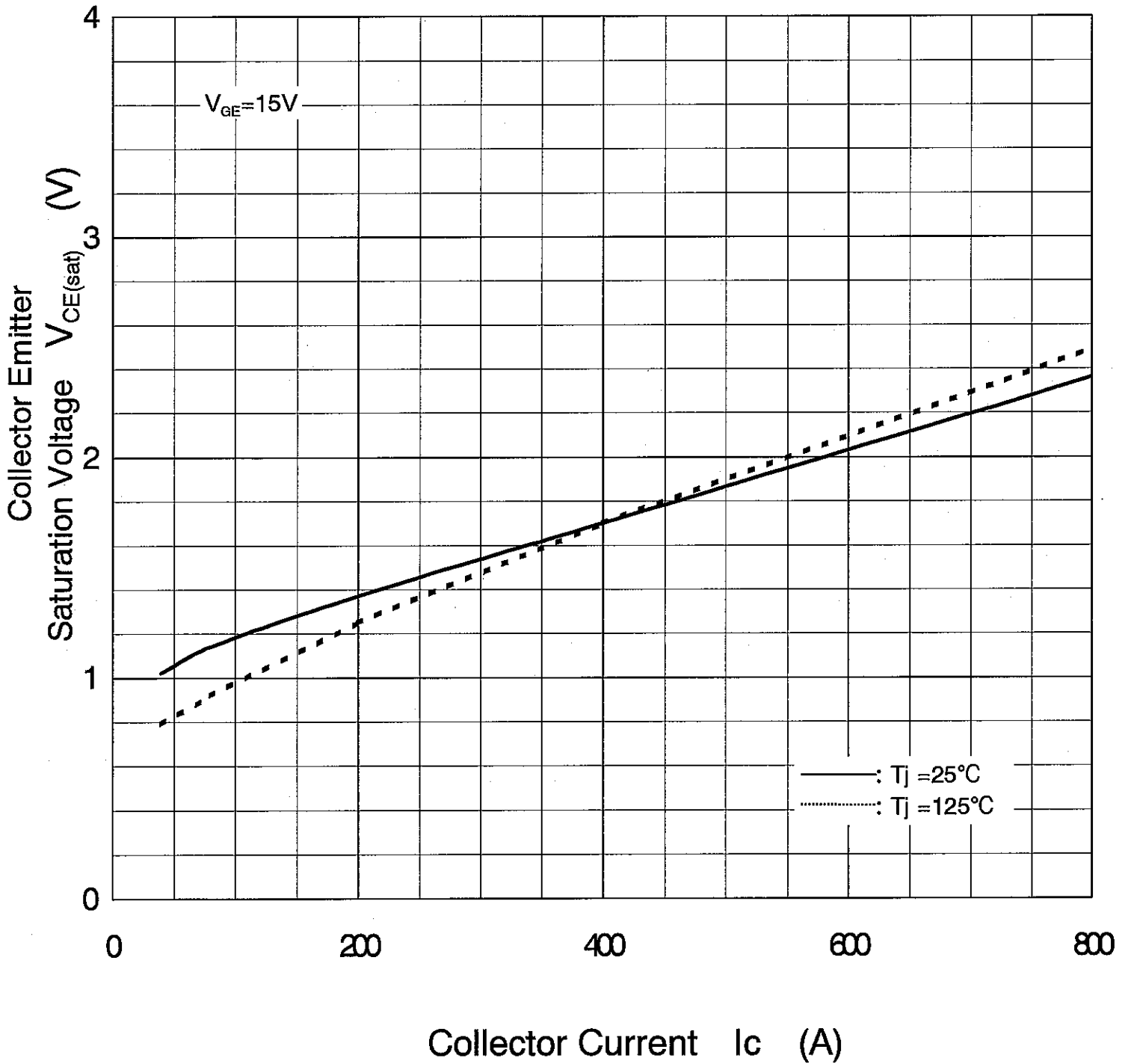
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Output Characteristics (Typical) CM400DY-12NF



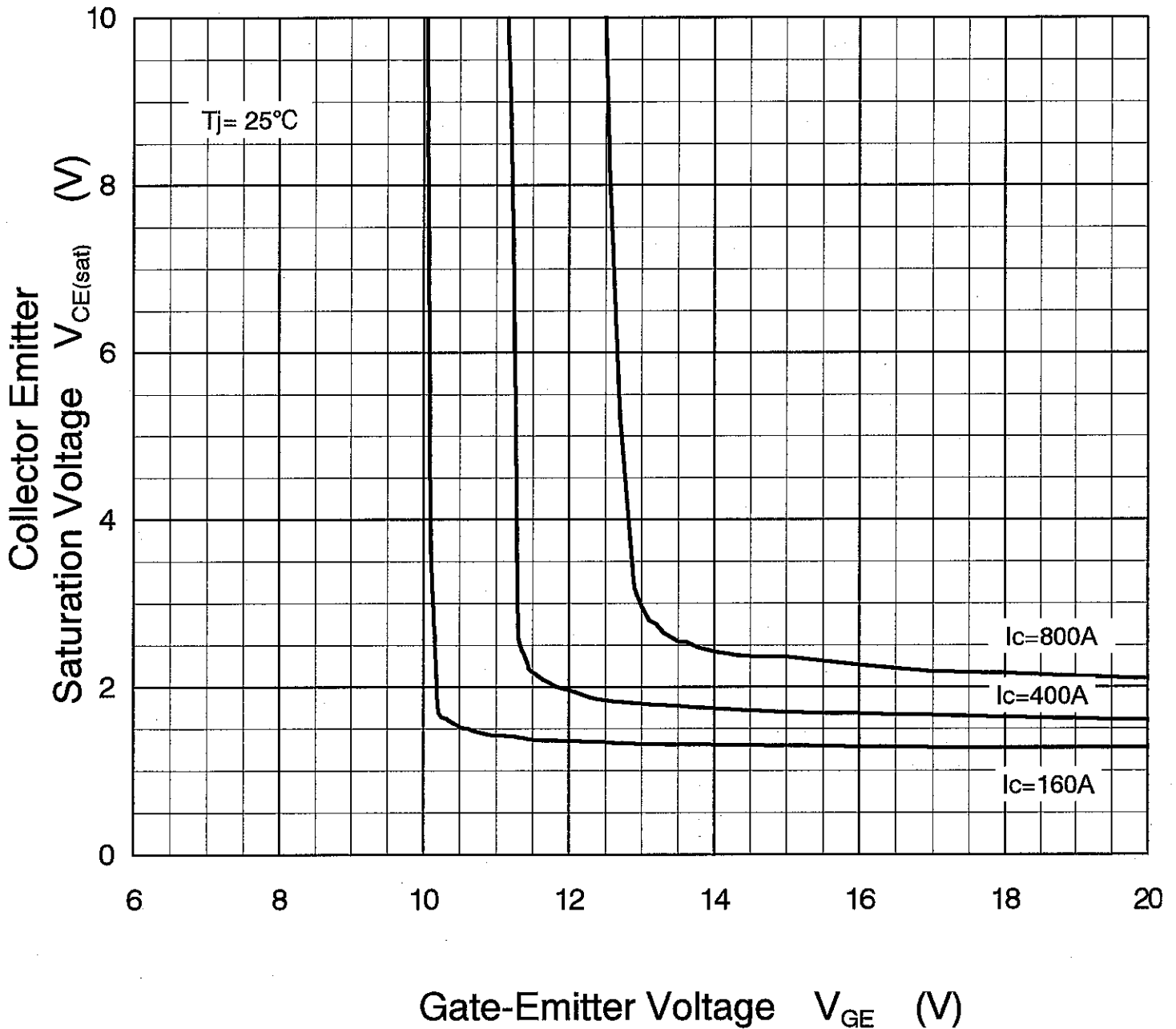
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Collector-Emitter Saturation Voltage Characteristics (Typical) CM400DY-12NF



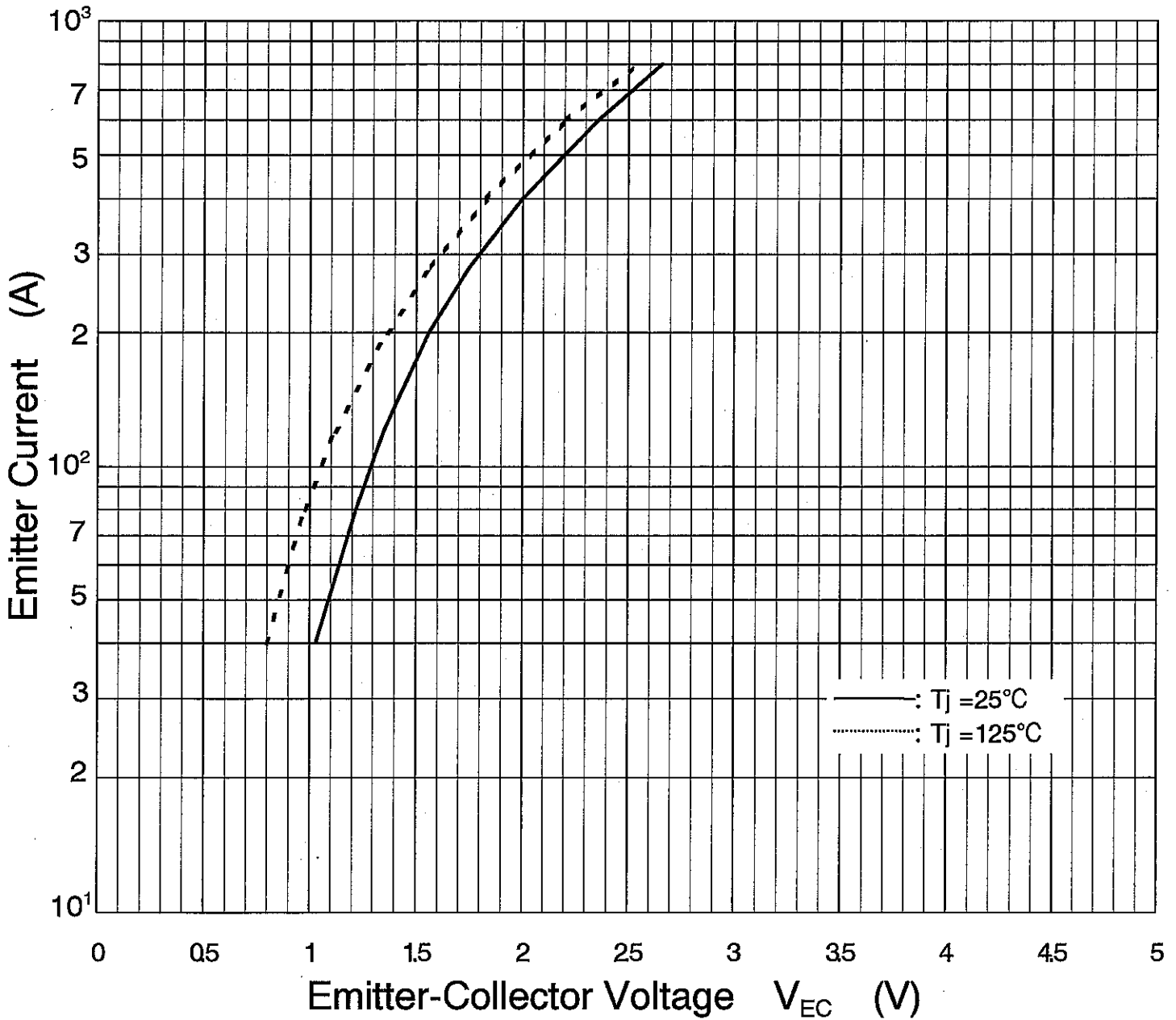
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Collector-Emitter Saturation Voltage Characteristics (Typical) CM400DY-12NF



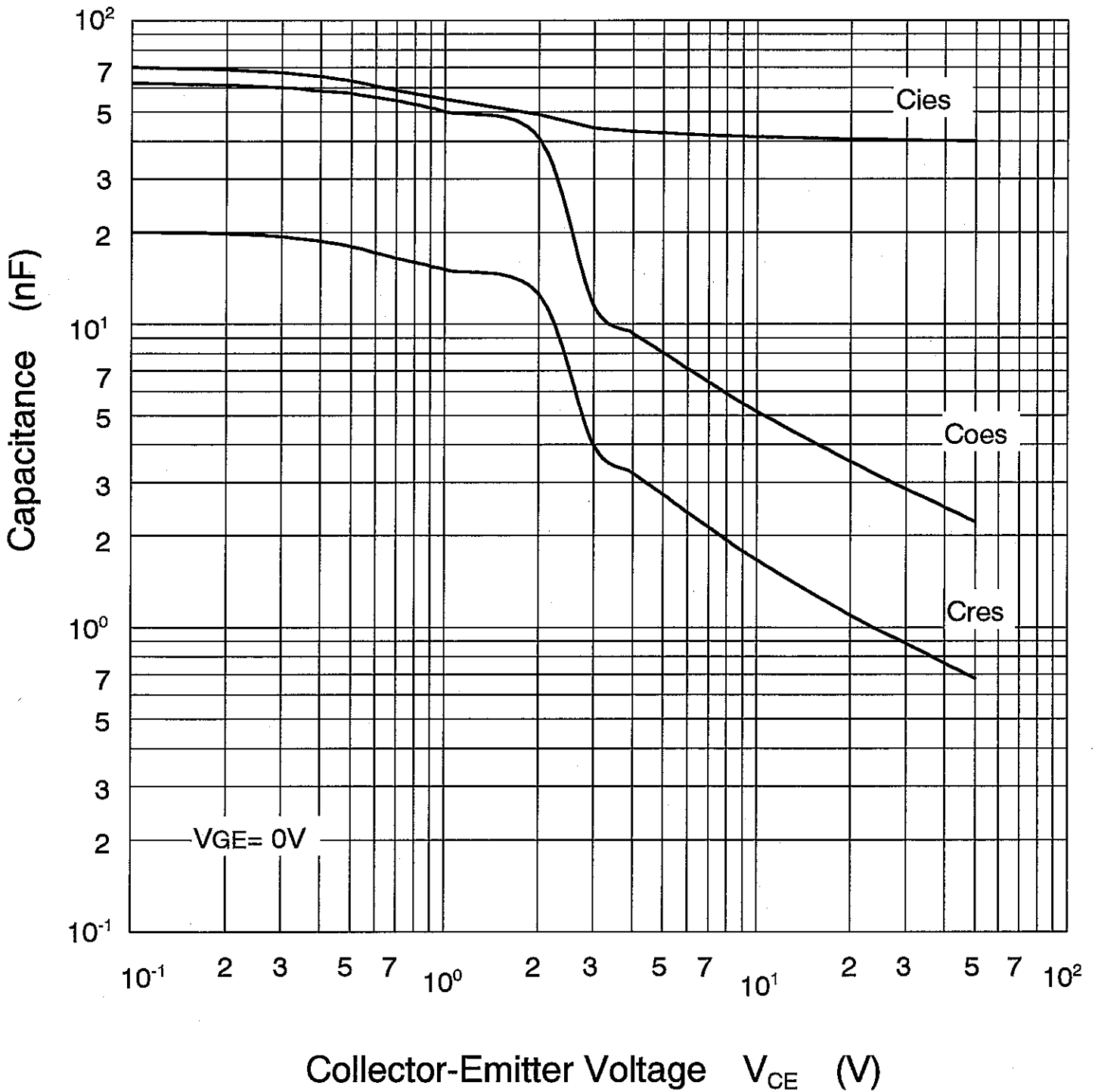
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Free-Wheel Diode Forward Characteristic (typical) CM400DY-12NF



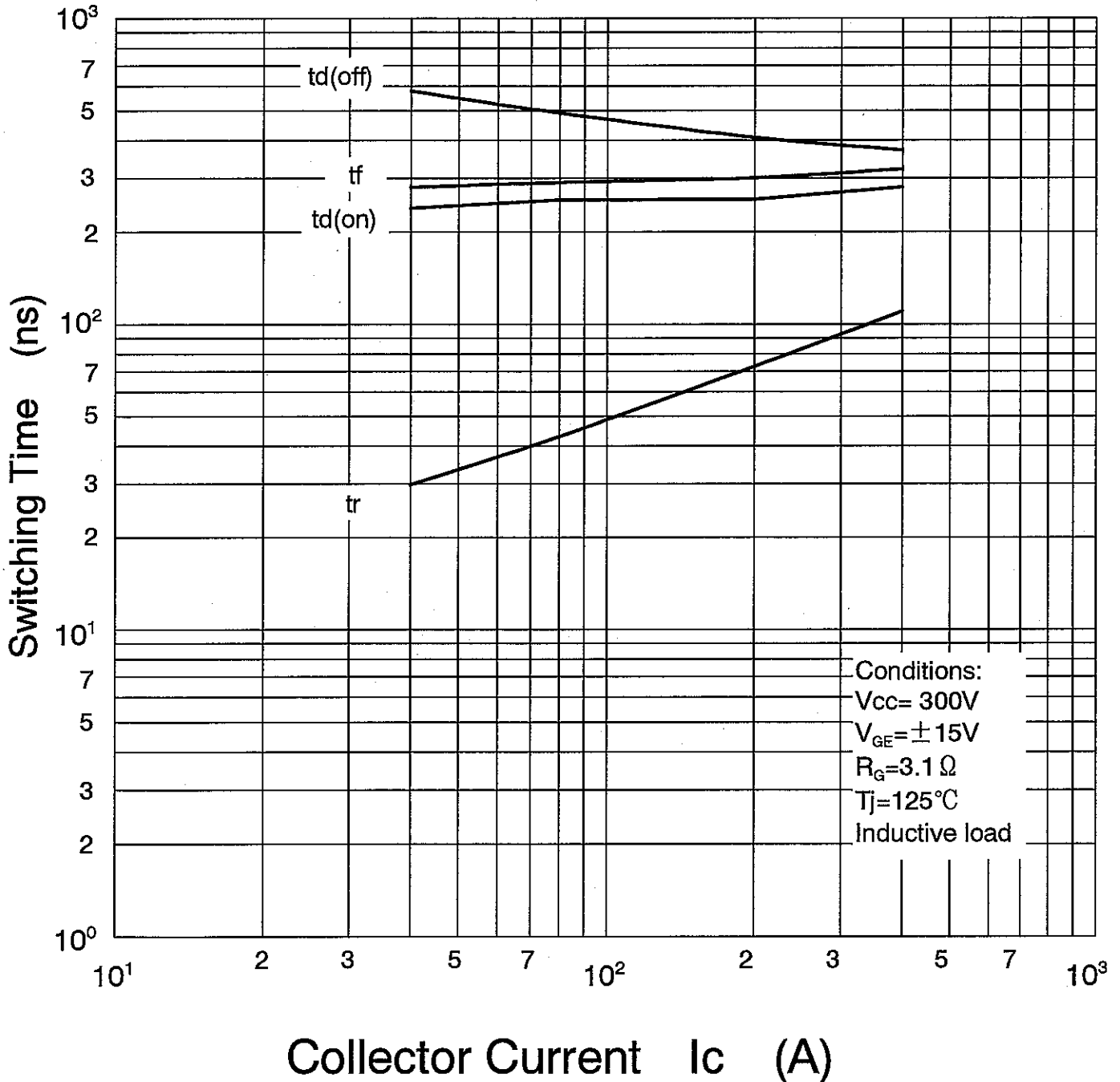
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Capacitance-VCE Characteristics (typical) CM400DY-12NF



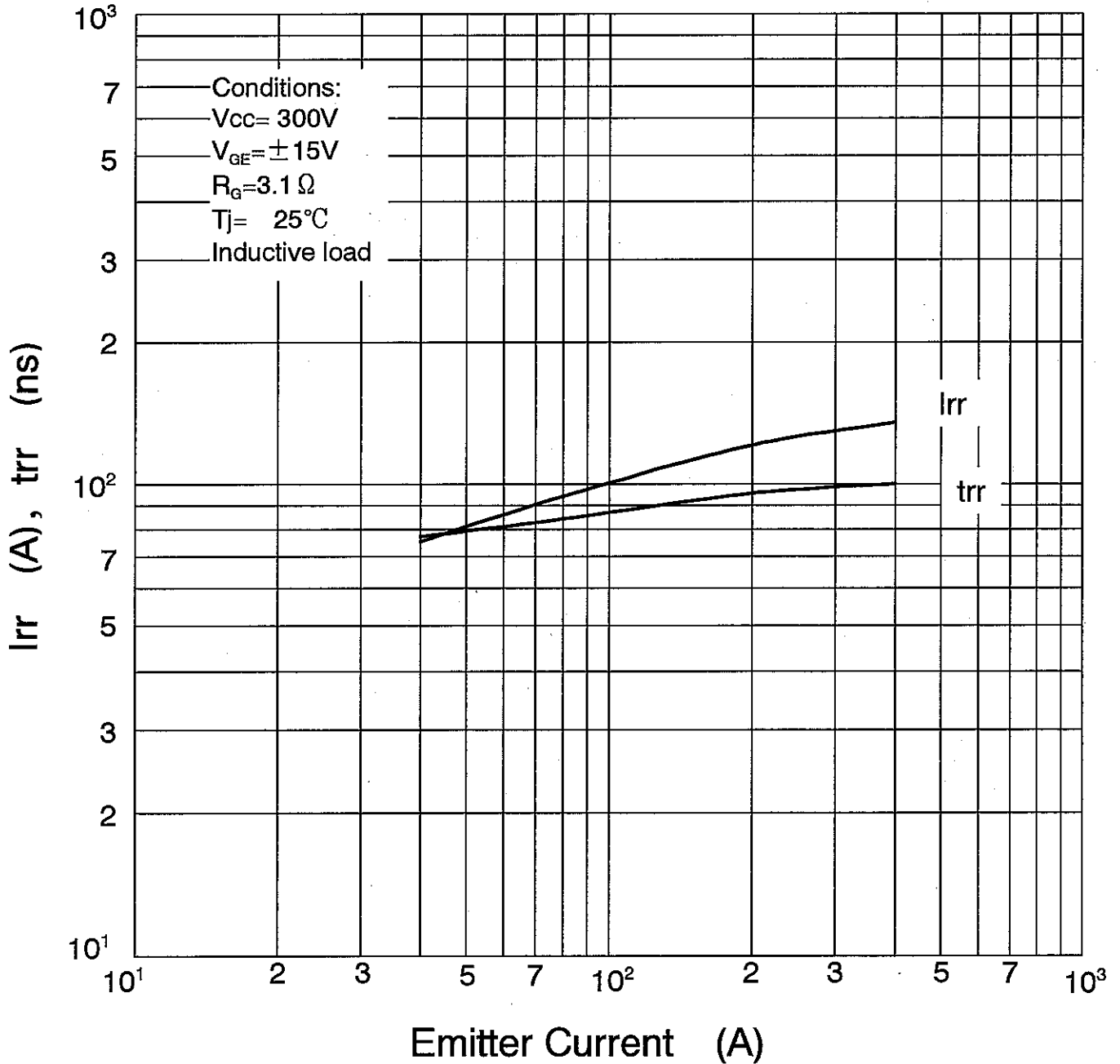
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Half-Bridge Switching Characteristics (typical) CM400DY-12NF



APPLICATION NOTE	Prepared by		Rev	
	Approved by			

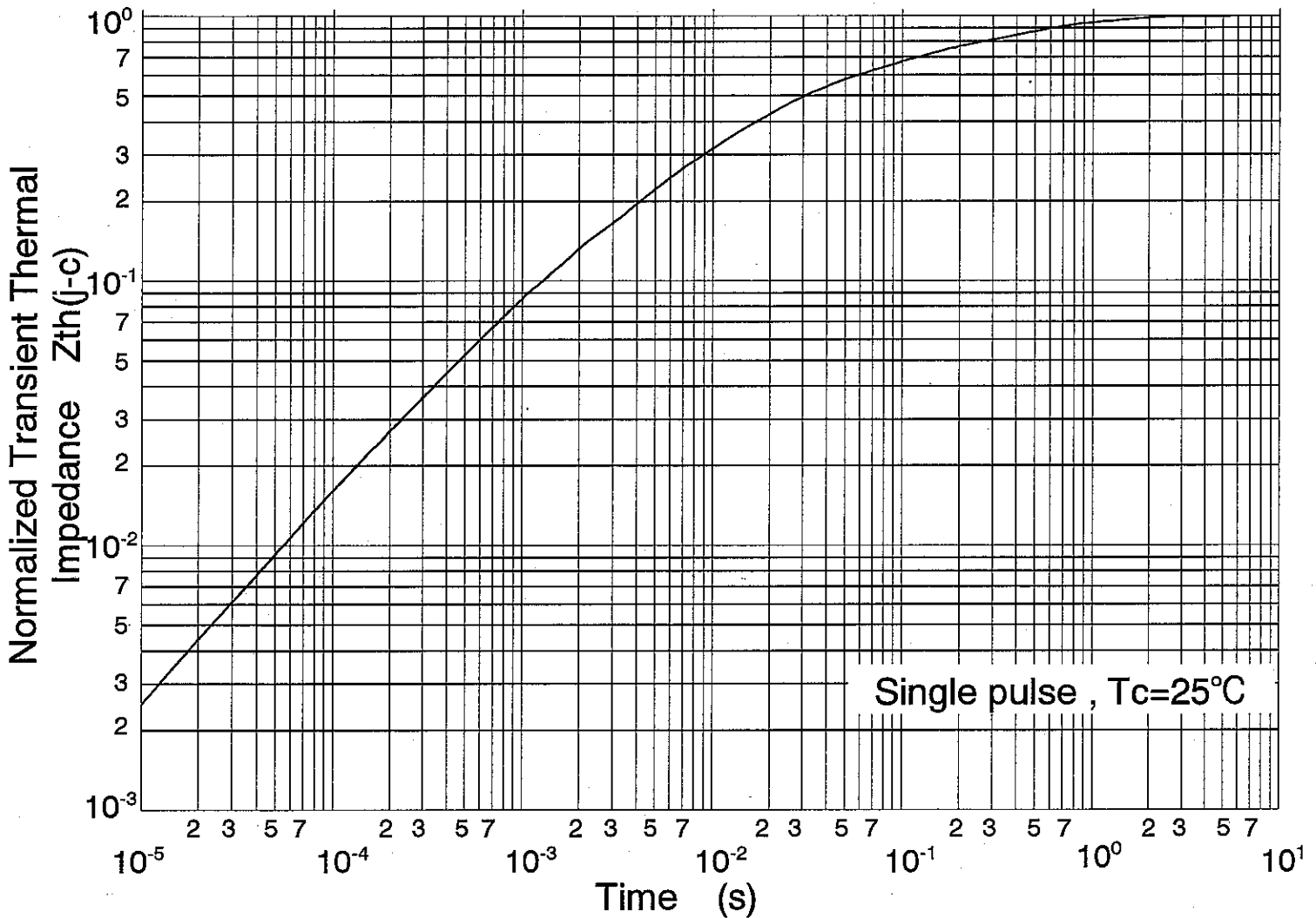
## Reverse Recovery Characteristics of Free-Wheel Diode (typical) CM400DY-12NF





APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Transient Thermal Impedance Characteristics (IGBT part & FWD part) CM400DY-12NF



IGBT part :

Per unit base= $R_{th(j-c)}=0.11^{\circ}\text{C/W}$

FWD part :

Per unit base= $R_{th(j-c)}=0.19^{\circ}\text{C/W}$

APPLICATION NOTE	Prepared by		Rev	
	Approved by			

**Gate Charge Characteristics**  
 (typical)  
**CM400DY-12NF**

