

MITSUBISHI ELECTRIC CORPORATION

APPLICATION NOTE	Prepared by	M.Koura	Rev	D	<i>M. Koura</i>
	Approved by	M.Tabata 26-Apr. -'02			<i>M. Tabata</i> 27-Jan. '03

Cmh4878D.doc

**Subject** Performance Curves of CM900DU-24NF  
(Tentative)

**Contents**

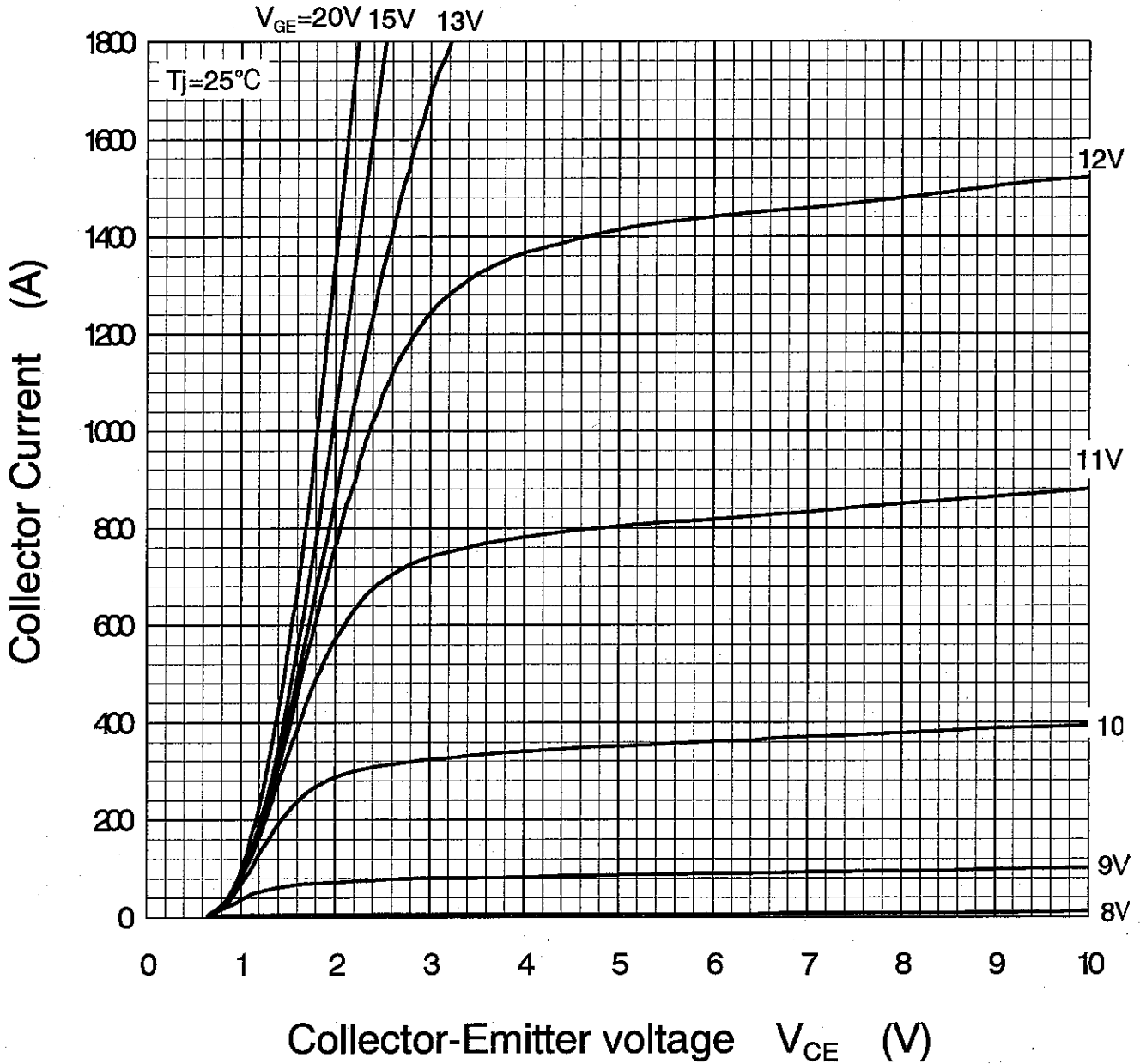
- Output Characteristics(typical)
- Transfer Characteristics(typical)
- Collector-Emitter Saturation Voltage Characteristics(typical)
- Collector-Emitter Saturation Voltage Characteristics(typical)
- Free-Wheel Diode Forward Characteristics(typical)
- Capacitance-VCE Characteristics(typical)
- Half-Bridge Switching Characteristics  $t$  vs.  $I_c$  (typical)
- Reverse Recovery Characteristics of Free-Wheel(typical)
- Transient Thermal Impedance Characteristics  
(IGBT part & FWD 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-4878-D	APPLICATION NOTE
-------------	------------	------------------

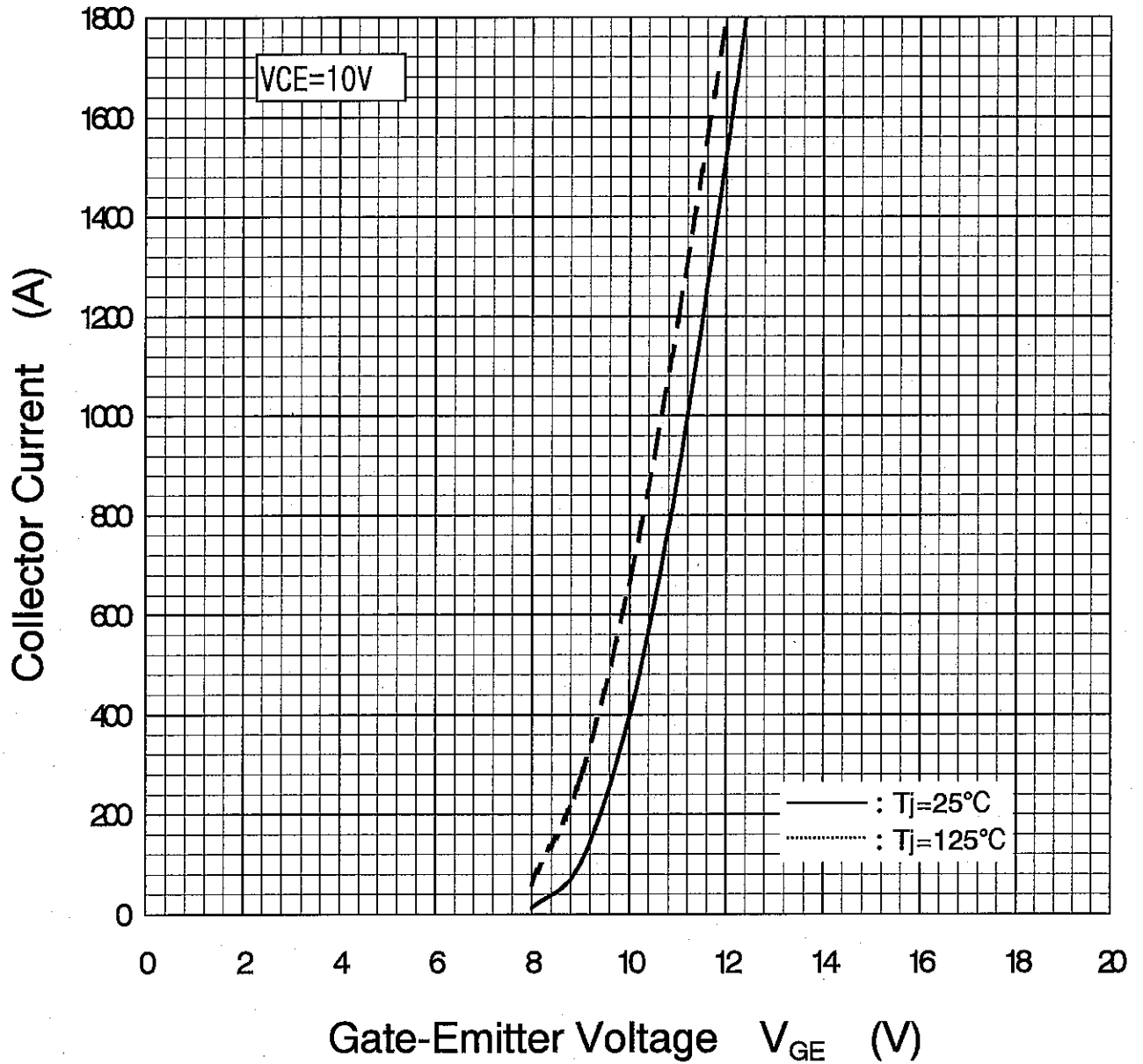
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Output Characteristics CM900DU-24NF (Typical)



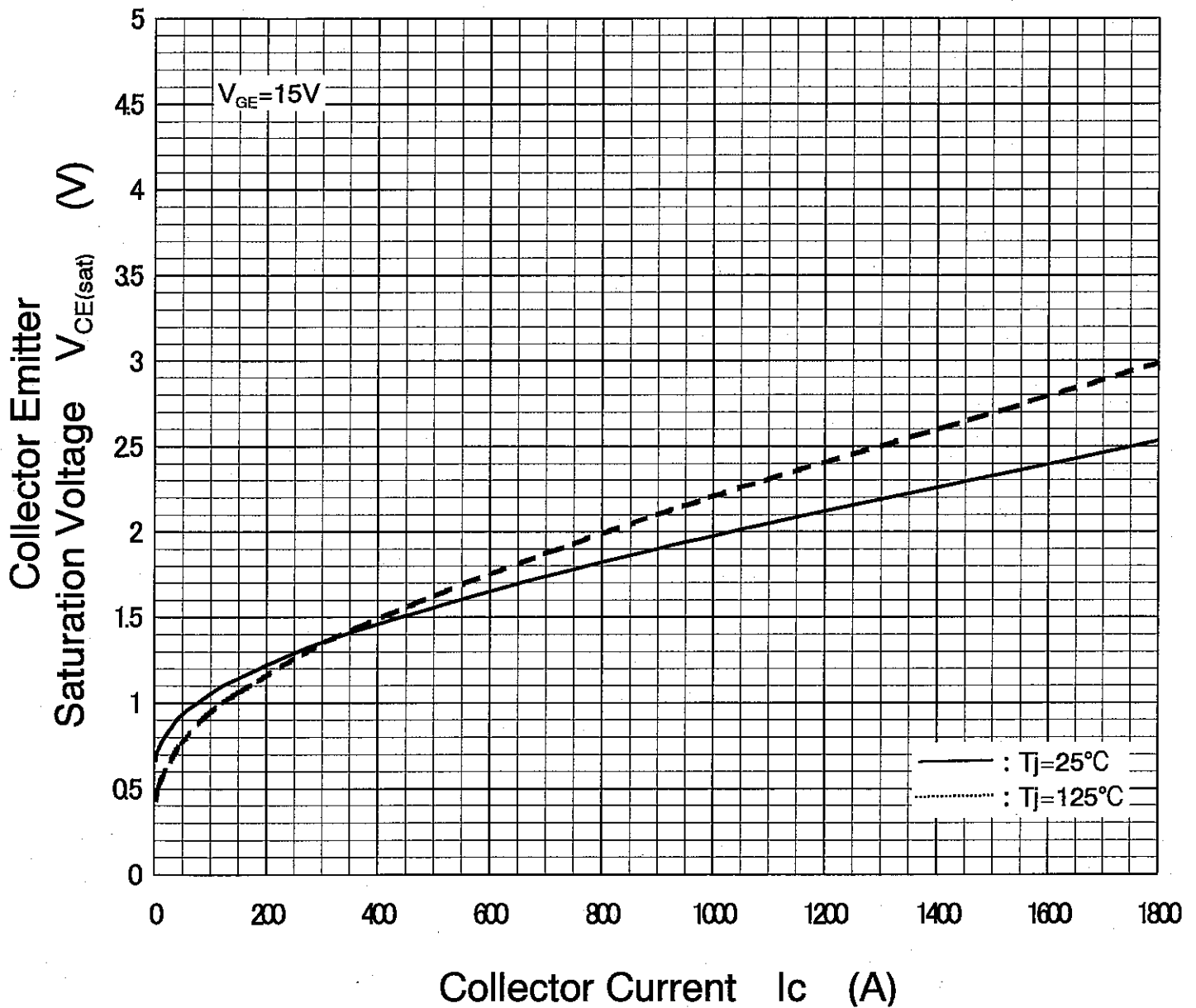
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Transfer Characteristics CM900DU-24NF (Typical)



APPLICATION NOTE	Prepared by		Rev	
	Approved by			

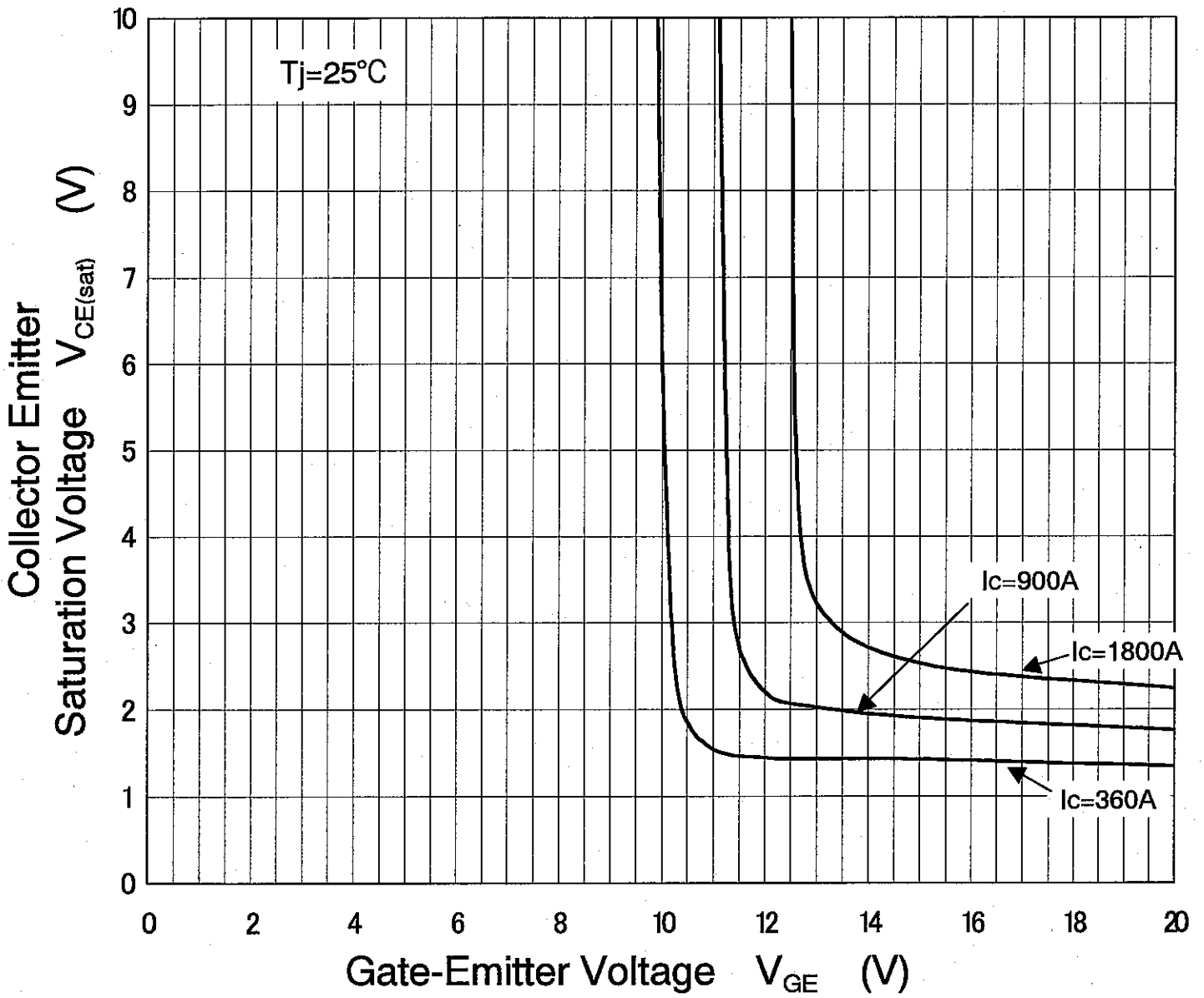
## Collector-Emitter Saturation Voltage Characteristics CM900DU-24NF (Typical)



Note :  $V_{CE(sat)}$  of this curve does not include terminal resistance  $0.143\text{ m}\Omega$ .

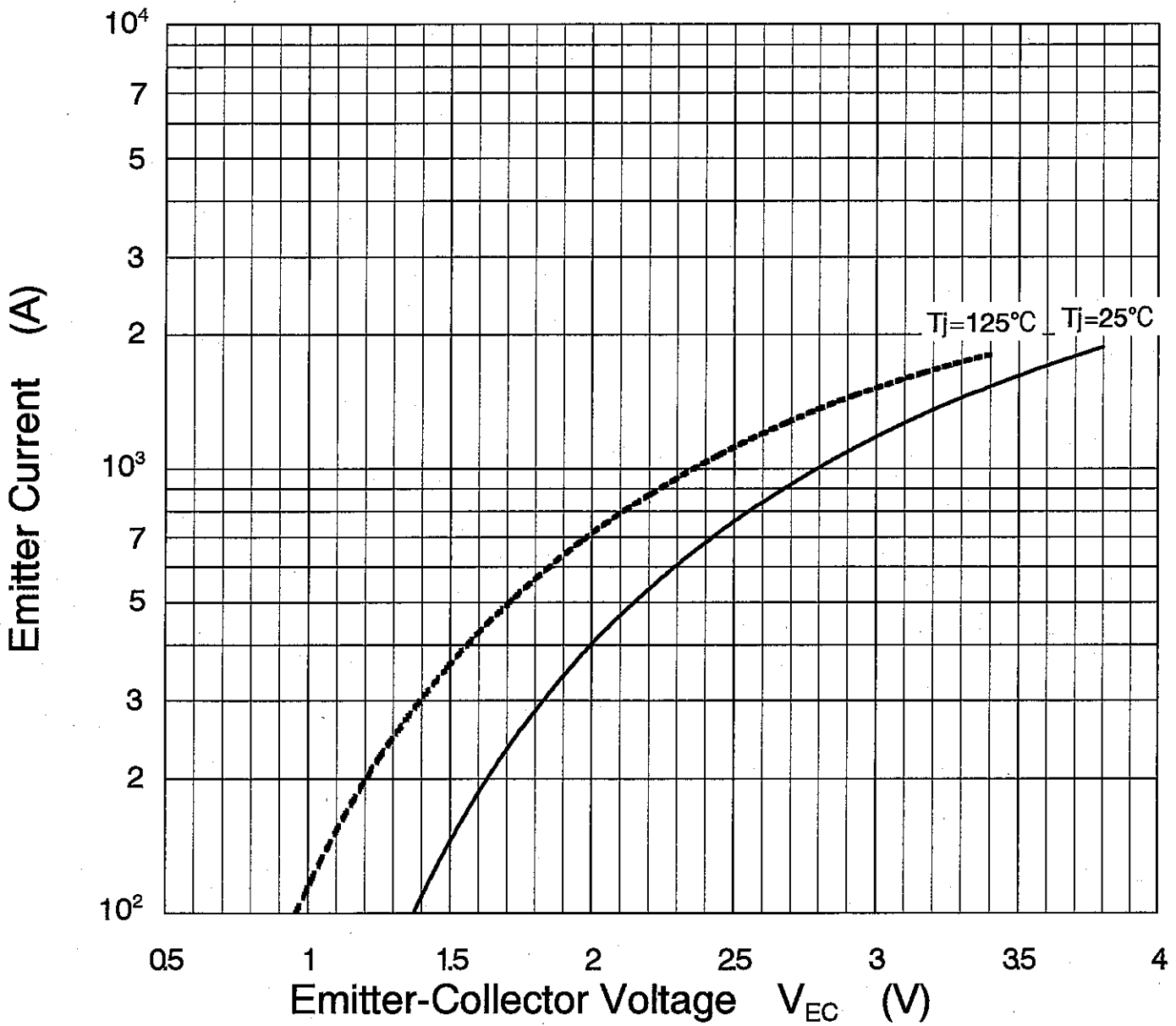
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Collector-Emitter Saturation Voltage Characteristics CM900DU-24NF (Typical)



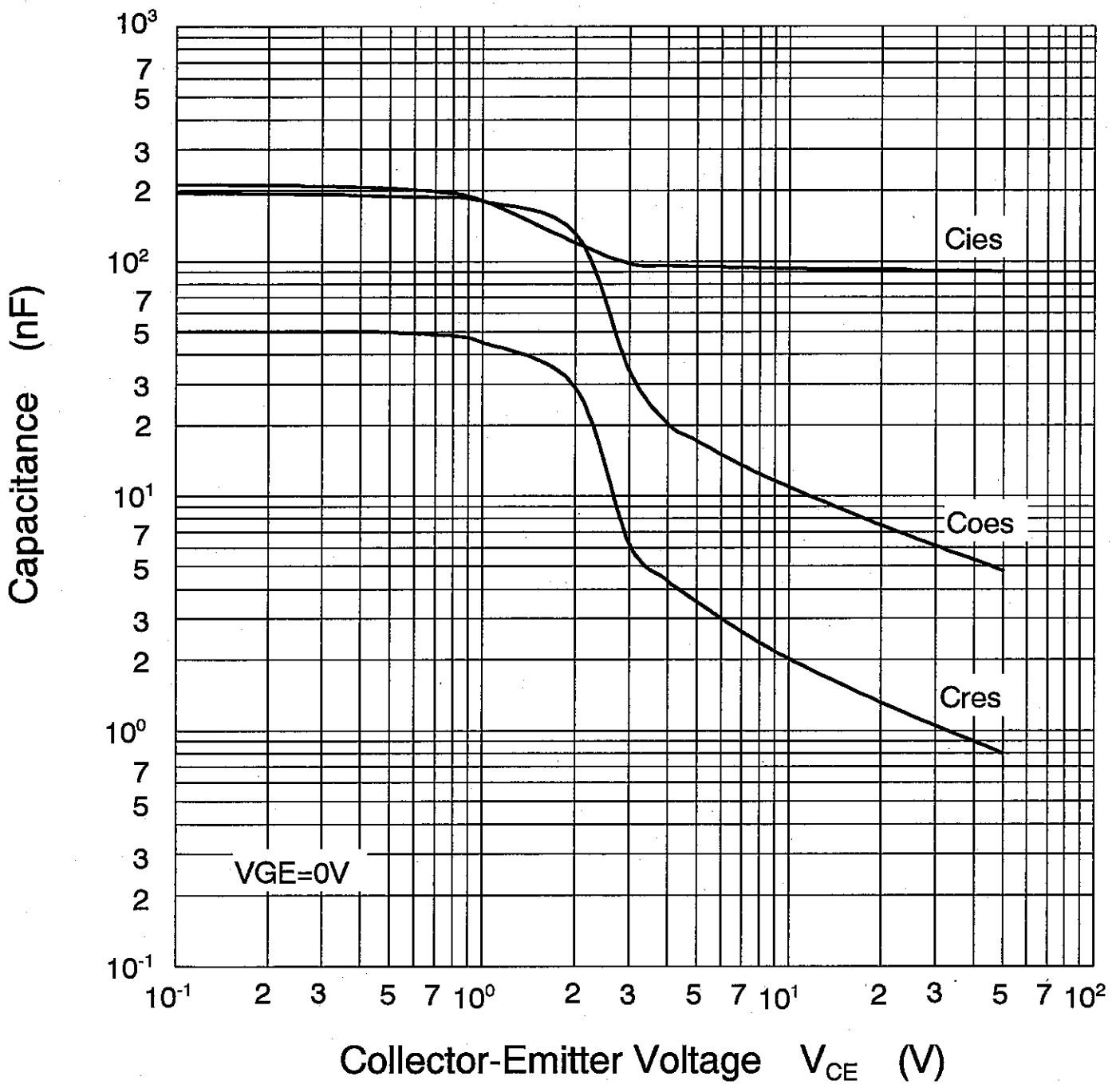
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Free-Wheel Diode Forward Characteristics CM900DU-24NF (typical)



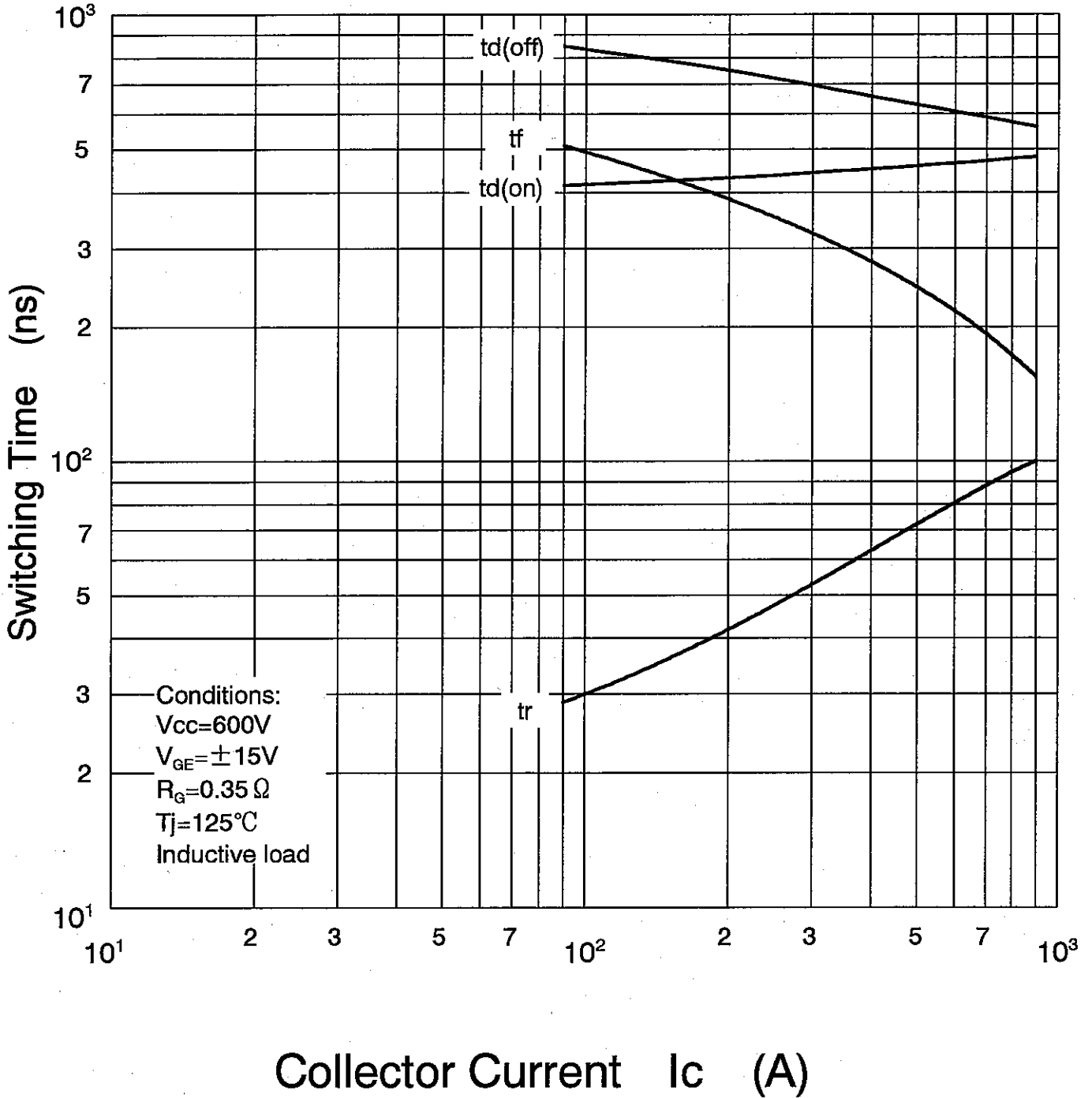
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

Capacitance- $V_{CE}$  Characteristics  
(typical)  
CM900DU-24NF



APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Half-Bridge Switching Characteristics CM900DU-24NF (typical)

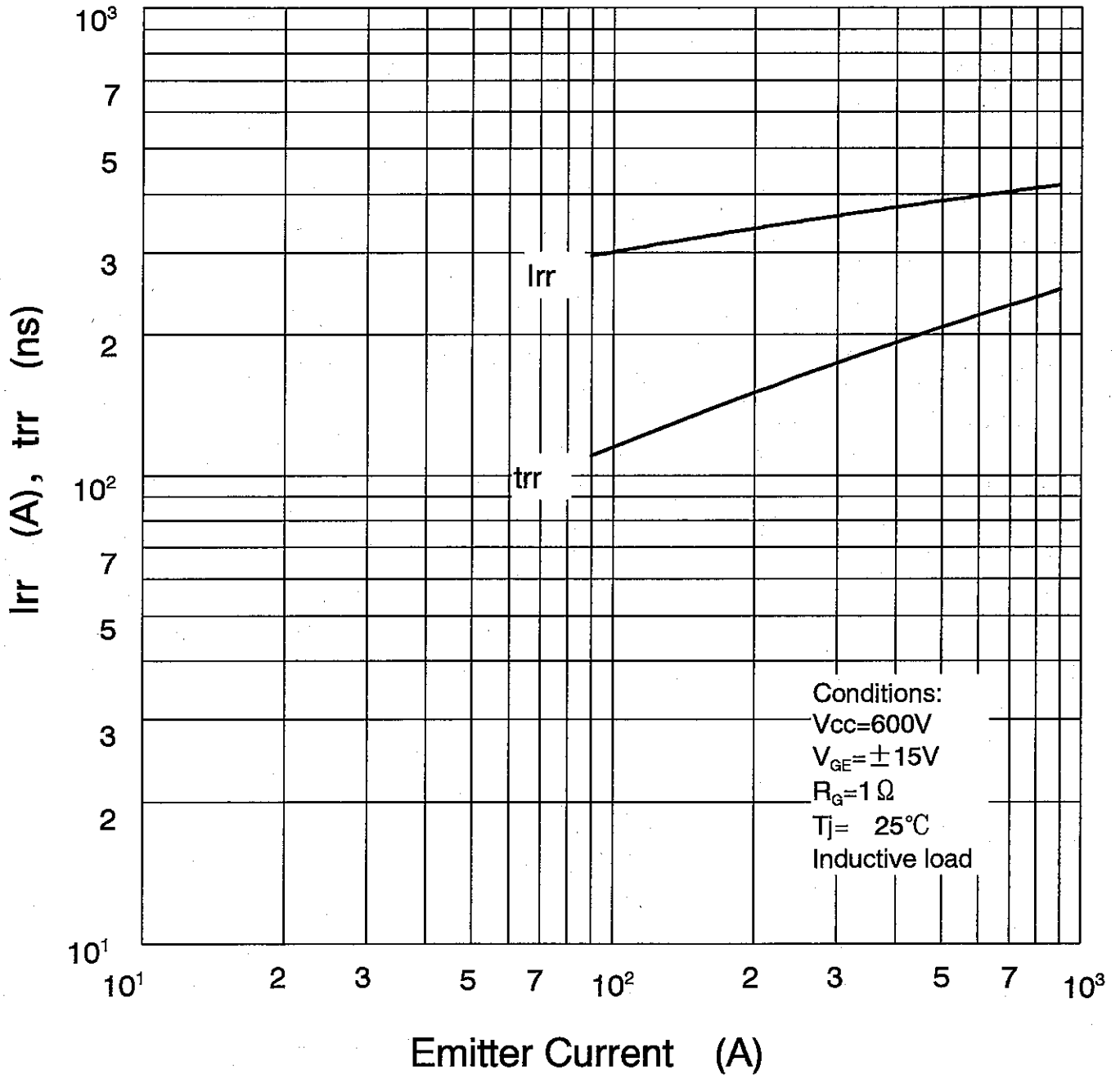


D



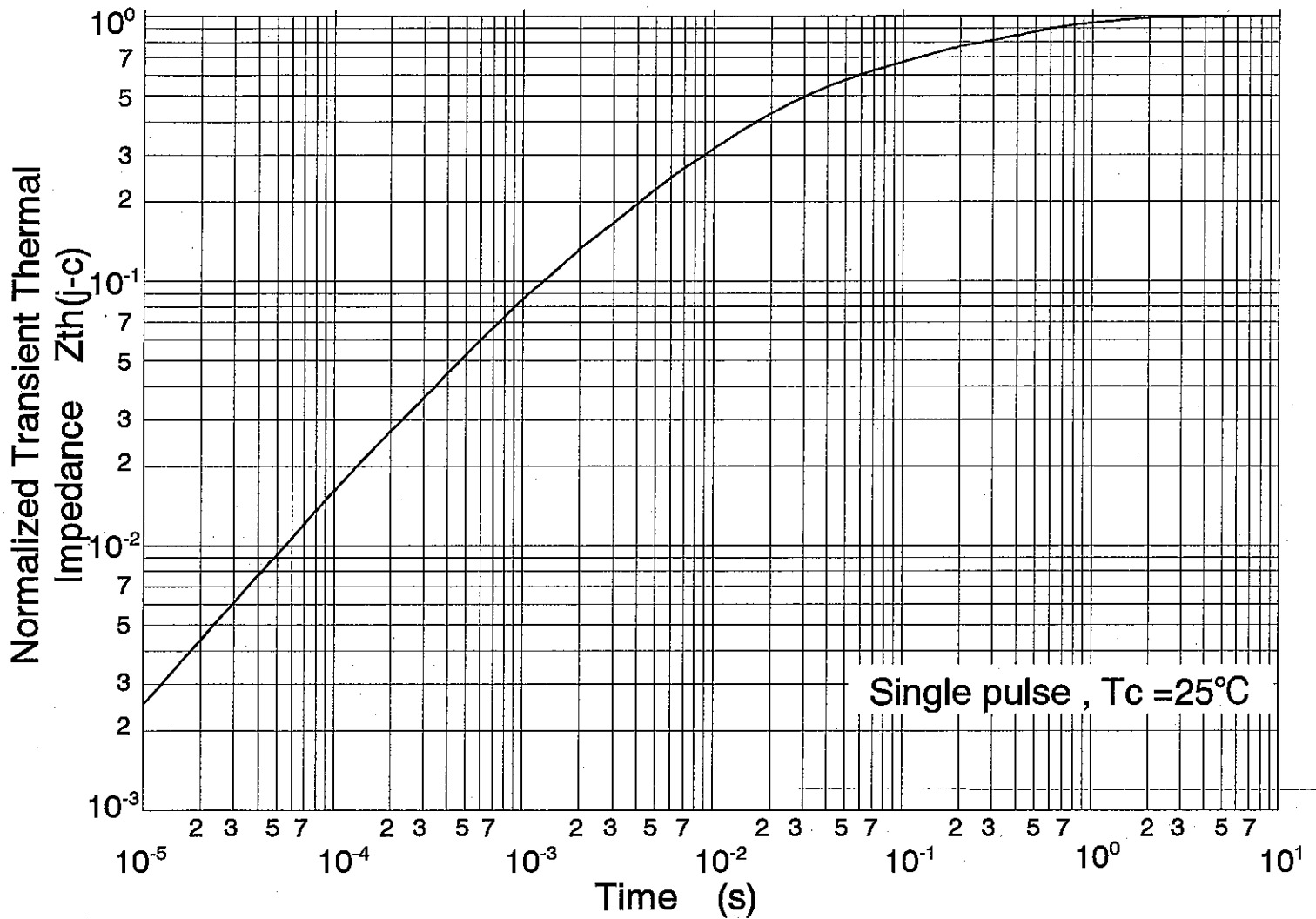
APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Reverse Recovery Characteristics Of Free-Wheel Diode CM900DU-24NF (typical)



APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Transient Thermal Impedance Characteristics (IGBT part & FWD part) CM900DU-24NF



IGBT part :

Per unit base= $R_{th(j-c)}=0.049^\circ\text{C/W}$

FWD part :

Per unit base= $R_{th(j-c)}=0.078^\circ\text{C/W}$

APPLICATION NOTE	Prepared by		Rev	
	Approved by			

## Gate Charge Characteristics CM900DU-24NF (typical)

