

### General Description

The 3205B uses advanced trench technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

### Features

- Fast switching
- 100% avalanche tested
- 175°C Operating Temperature
- RoHS Compliant

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	65	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	130	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	100	A
$I_{DM}$	Pulsed Drain Current	520	A
EAS	Single Pulse Avalanche Energy	1000	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	260	W
$T_{STG}$	Storage Temperature Range	-55 to 175	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 175	$^\circ C$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.75	$^\circ C/W$

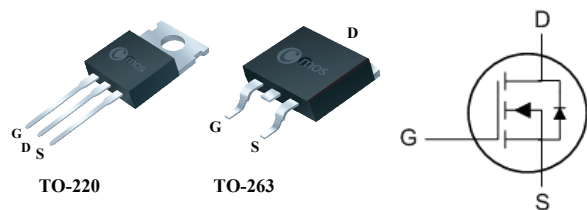
### Product Summary

BVDSS	RDSON	ID
65V	5.8m $\Omega$	130A

### Applications

- LED power controller
- DC-DC & DC-AC converters
- High current, high speed switching
- Solenoid and relay drivers
- Motor control, Audio amplifiers

### TO-220/263 Pin Configuration



Type	Package	Marking
CMP3205B	TO-220	CMP3205B
CMB3205B	TO-263	CMB3205B

### Electrical Characteristics ( $T_J=25^\circ\text{C}$ , unless otherwise noted)

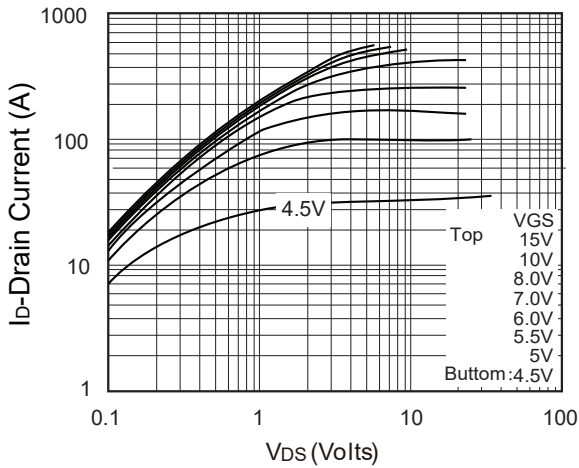
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	65	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=30A$	---	---	5.8	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	2	---	4	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=60V, V_{GS}=0V$	---	---	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	$\pm 100$	nA
$g_{fs}$	Forward Transconductance	$V_{DS}=10V, I_D=10A$	---	20	---	S
$R_g$	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	2.2	---	$\Omega$
$Q_g$	Total Gate Charge	$I_D=30A$	---	125	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DD}=35V$	---	25	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=10V$	---	50	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=35V, I_D=2A$	---	21	---	ns
$T_r$	Rise Time	$R_L=15\Omega$	---	20	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=2.5\Omega$	---	70	---	
$T_f$	Fall Time	$V_{GS}=10V$	---	31	---	
$C_{iss}$	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	5850	---	pF
$C_{oss}$	Output Capacitance		---	410	---	
$C_{rss}$	Reverse Transfer Capacitance		---	315	---	

### Diode Characteristics

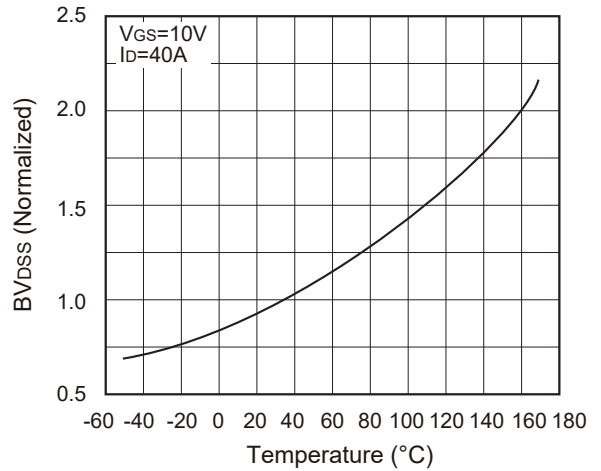
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V, \text{Force Current}$	---	---	130	A
$I_{SM}$	Pulsed Source Current		---	---	520	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=45A, T_J=25^\circ\text{C}$	---	---	1.2	V

Note :

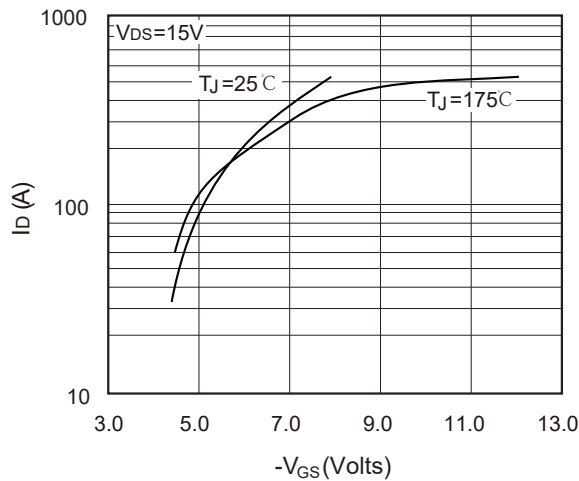
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 Cmos reserves the right to improve product design, functions and reliability without notice.



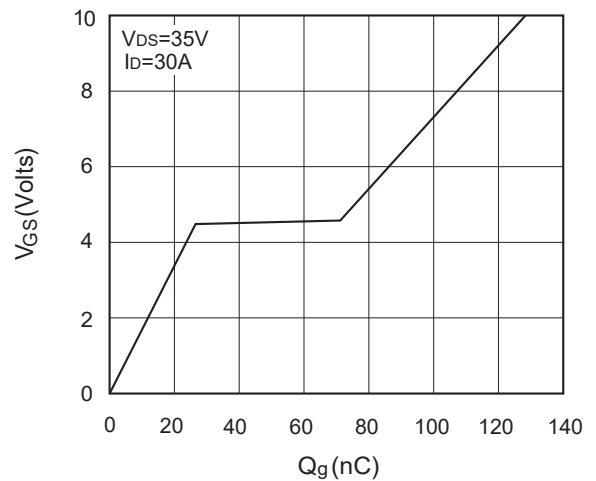
On-Region Characteristics



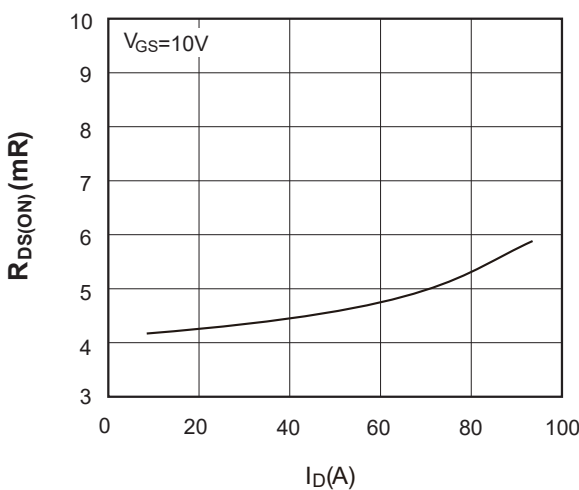
On-Resistance vs. Junction Temperature



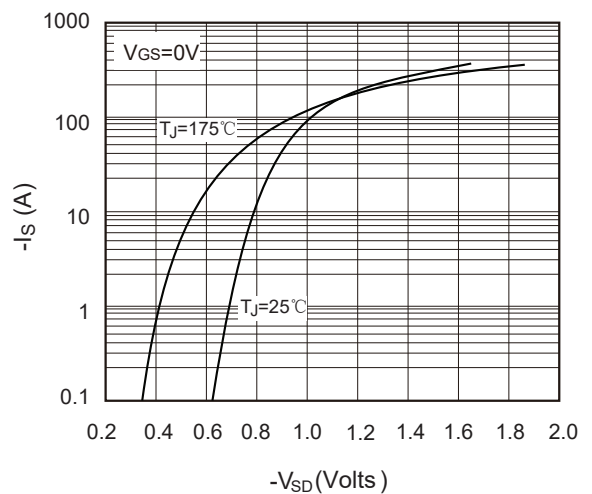
Transfer Characteristics



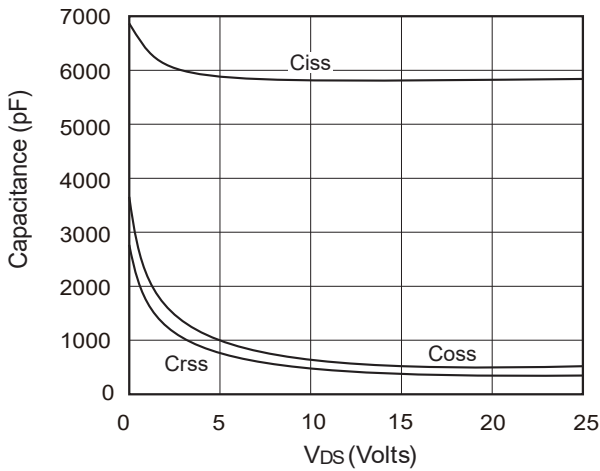
Gate-Charge Waveforms



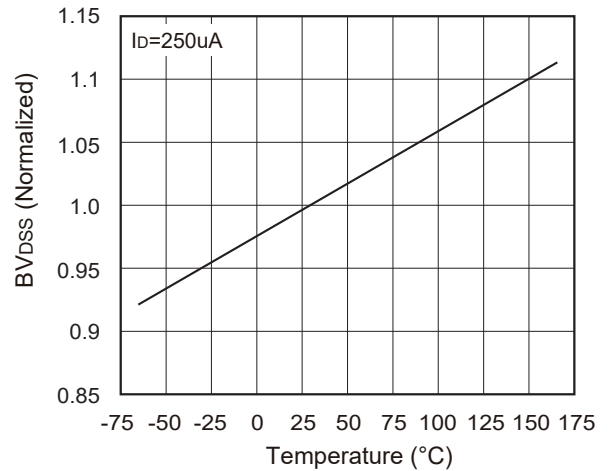
On-Resistance vs. Drain Current and Gate



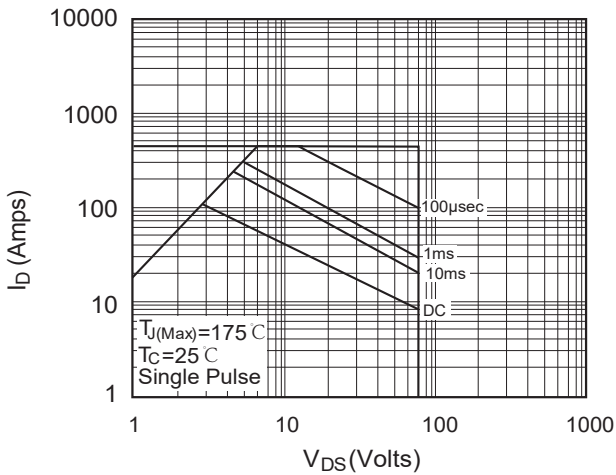
Body-Diode Characteristics



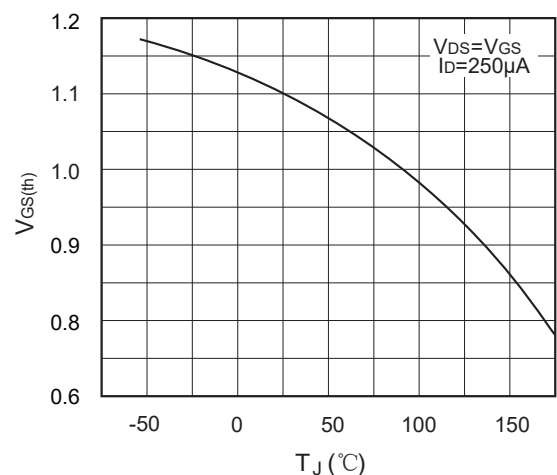
Capacitance Characteristics



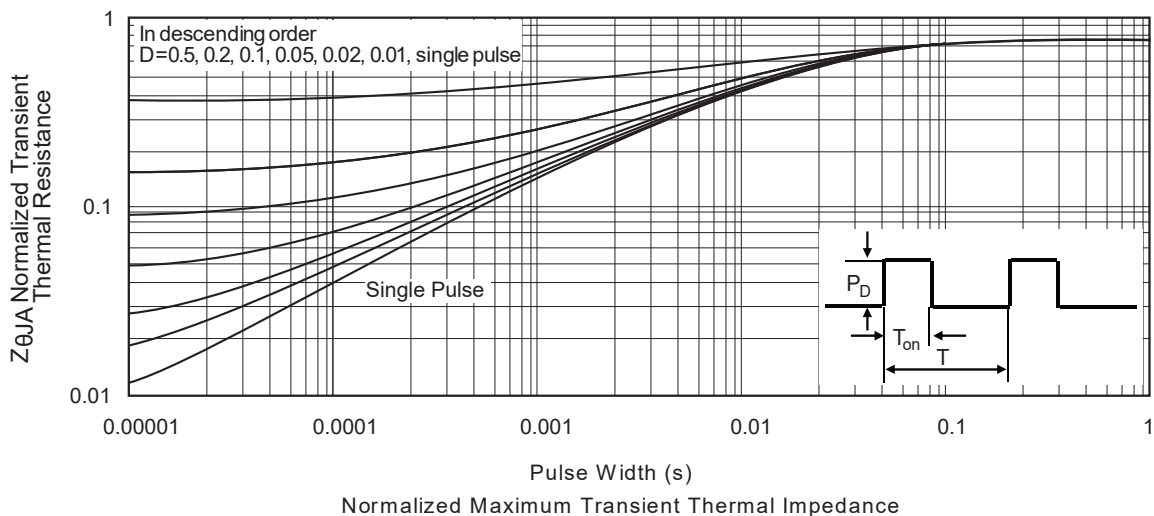
BV<sub>DSS</sub> vs. Junction Temperature



Maximum Forward Biased Safe Operating Area



V<sub>GS(th)</sub> vs Junction Temperature



Normalized Maximum Transient Thermal Impedance