

General Description

The 540P uses advanced process technology and design to provide excellent RDS(ON). These devices are well suited for low voltage applications such as audio amplifier, high efficiency switching DC/DC converters, and DC motor control.

Features

- Fast Switching
- 100% Avalanche tested
- RoHS compliant

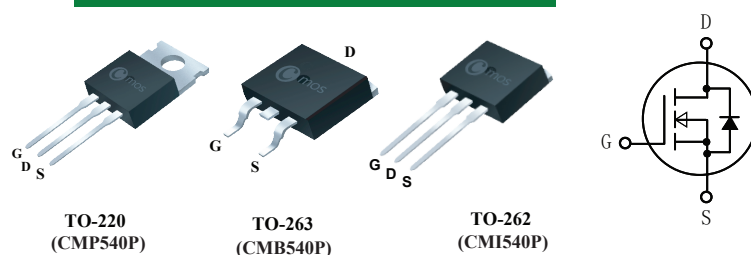
Product Summary

BVDSS	RDSON	ID
100V	45mΩ	33A

Applications

- DC-DC converters
- UPS
- Power Supply
- Motor Control

TO-220/263/262 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	33	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	23	A
I_{DM}	Pulsed Drain Current ¹	100	A
EAS	Single Pulse Avalanche Energy ²	324	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	130	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.15	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=5A$	---	---	45	$m\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100V$, $V_{GS}=0V$	---	---	25	μA
		$V_{DS}=80V$, $V_{GS}=0V$, $T_C=150^{\circ}\text{C}$	---	---	250	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=10A$	---	23	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	2	---	Ω
Q_g	Total Gate Charge	$I_D=16A$	---	44	---	nC
Q_{gs}	Gate-Source Charge	$V_{DD}=80V$	---	9	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	19	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=50V$	---	13	---	ns
T_r	Rise Time	$I_D=16A$	---	35	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=5.1\Omega$	---	40	---	
T_f	Fall Time	$V_{GS}=10V$	---	35	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1800	---	pF
C_{oss}	Output Capacitance		---	300	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	33	A
I_{SM}	Pulsed Source Current		---	---	100	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=10A$, $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

1.Repetitive rating; pulse width limited by maximum junction temperature

2.The EAS data shows Max. rating . The test condition is $V_D=50V$, $V_{GS}=10V$, $L=0.5\text{mH}$, $I_{AS}=36A$

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