

### General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent RDS(ON) . This device is suitable for use as a load switch or in PWM applications.

### Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	-150	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	-25	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	-17.5	A
$I_{DM}$	Pulsed Drain Current	-100	A
EAS	Single Pulse Avalanche Energy <sup>1</sup>	115	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	90	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient	---	62.5	$^\circ C/W$
$R_{\theta JC}$	Junction-to-Case (Drain)	---	1.39	$^\circ C/W$

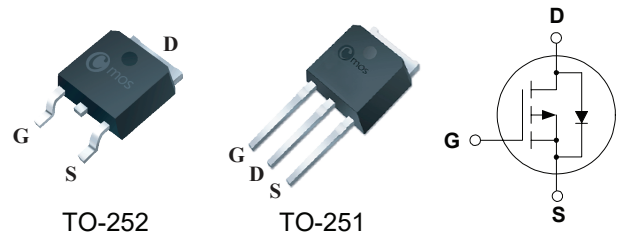
### Product Summary

BVDSS	RDSON	ID
-150V	150m $\Omega$	-25A

### Applications

- Active Clamp Switch
- Load Switch
- Portable equipment and battery powered systems

### TO-252/251 Pin Configuration



Type	Package	Marking
CMD25P15	TO-252	CMD25P15
CMU25P15	TO-251	CMU25P15

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-150	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-12.5A$	---	128	150	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	$V_{DS}=-150V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	-1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	$\pm 100$	nA
$g_{fs}$	Forward Transconductance	$V_{DS}=-10V, I_D=-12.5A$	---	25	---	S
$Q_g$	Total Gate Charge	$V_{DS}=-80V, I_D=-12.5A$ $V_{GS}=-10V$	---	60	---	nC
$Q_{gs}$	Gate-Source Charge		---	9	---	
$Q_{gd}$	Gate-Drain Charge		---	17	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-50V, V_{GS}=-10V, R_G=3.3\Omega$ $I_D=-12.5A, R_D=4.2\Omega$	---	11	---	ns
$T_r$	Rise Time		---	26	---	
$T_{d(off)}$	Turn-Off Delay Time		---	67	---	
$T_f$	Fall Time		---	60	---	
$C_{iss}$	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V, f=1\text{MHz}$	---	4200	---	pF
$C_{oss}$	Output Capacitance		---	120	---	
$C_{rss}$	Reverse Transfer Capacitance		---	110	---	

### Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V$ , Force Current	---	---	-25	A
$I_{SM}$	Pulsed Source Current		---	---	-100	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=-25A$	---	-0.9	-1.2	V

Notes:

1.The EAS data shows Max. rating .The test condition is  $V_{DS}=-30V, V_{GS}=-10V, L=0.5\text{mH}, I_{AS}=-21.6A$ .

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