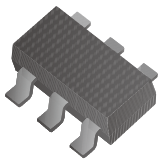
CMS02P02T6-HF

Dual P-CHANNEL MOSFET

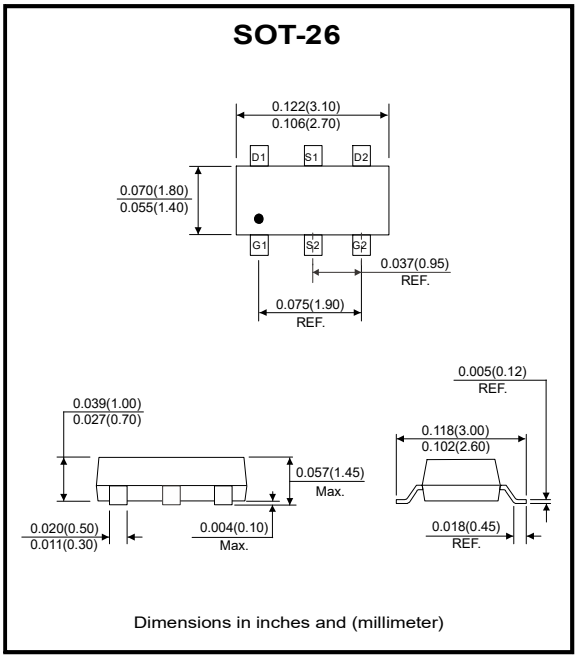
RoHS Device

Halogen Free



Features

- Advanced DMOS Trench technology
- Fast Switching
- Suit for 1.8V Gate Drive Applications
- Green Device Available

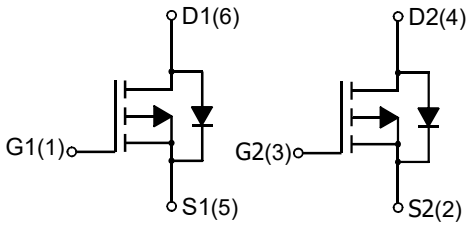


Description

The CMS02P02T6 is using trench DMOS technology. This a dvanced technology has been especially tailored to minimize $R_{DS(ON)}$, provide superior switching performance. These dev ices are well suited for high efficiency fast switching applications.

The CMS02P02T6 meet the RoHS and Green Product require ment with full function reliability approved.

Circuit diagram



Absolute Maximum Ratings (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current[1]	I_D @T_C=25℃	-2.5	A
Continuous Drain Current[1]	I_D @T_C=100℃	-1.5	A
Pulsed Drain Current[2]	I_{DM}	-10	A
Power Dissipation[3]	P_D @T_C=25℃	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	℃

Thermal Data

Parameter	Symbol	Max. Ratings	Unit
Thermal Resistance Junction-ambient[1]	$R_{\theta JA}$	100	℃/W

Electrical Characteristics (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-20	-	-	V	V_{GS}=0, I_D=-250uA
Gate Threshold Voltage	$V_{GS(th)}$	-0.3	-0.6	-1.0	V	V_{DS}=V_{GS}, I_D=-250uA
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±10V
Drain-Source Leakage Current(T_J=25℃)	I_{DSS}	-	-	-1	uA	V_{DS}=-20V, V_{GS}=0
Drain-Source Leakage Current(T_J=125℃)		-	-	-10		V_{DS}=-16V, V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	-	-	90	mΩ	V_{GS}=-4.5V, I_D=-2.5A
		-	-	130		V_{GS}=-2.5V, I_D=-2.0A
		-	-	180		V_{GS}=-1.8V, I_D=-1.0A
Total Gate Charge[2]	Q_g	-	4.8	-	nC	I_D=-2A V_{DS}=-10V V_{GS}=-4.5V
Gate-Source Charge	Q_{gs}	-	0.5	-		
Gate-Drain ("Miller") Change	Q_{gd}	-	1.9	-		
Turn-on Delay Time[2]	$T_{d(on)}$	-	3.5	-	ns	V_{DS}=-10V I_D=-1A V_{GS}=-4.5V R_G=25Ω
Rise Time	T_r	-	12.6	-		
Turn-off Delay Time	$T_{d(off)}$	-	32.6	-		
Fall Time	T_f	-	8.4	-		
Input Capacitance	C_{iss}	-	350	-	pF	V_{GS}=0V V_{DS}=-15V f=1.0MHz
Output Capacitance	C_{oss}	-	66	-		
Reverse Transfer Capacitance	C_{rss}	-	50	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Diode Forward Voltage[2]	V_{SD}	-	-	-1.0	V	I_S=-1A, V_{GS}=0V, T_J=25℃
Continuous Source Current[1,4]	I_S	-	-	-2.5	A	V_G=V_D=0V, Force Current
Pulsed Source Current[2,4]	I_{SM}	-	-	-5.0	A	

Notes: 1. Surface mounted on a 1 inch ^{2} FR-4 board with 2OZ copper.

2. The data tested by pulsed, pulse width ≦ 300us, duty cycle ≦ 2%.

3. The power dissipation is limited by 150℃ junction temperature.

4. The data is theoretically the same as ID and IDM , in real applications, should be limited by total power dissipation.

RATING AND CHARACTERISTIC CURVES

Typical characteristics

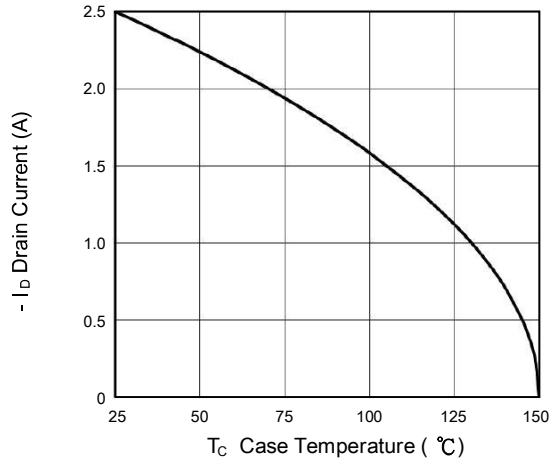


Fig.1 Drain Current vs. T_C

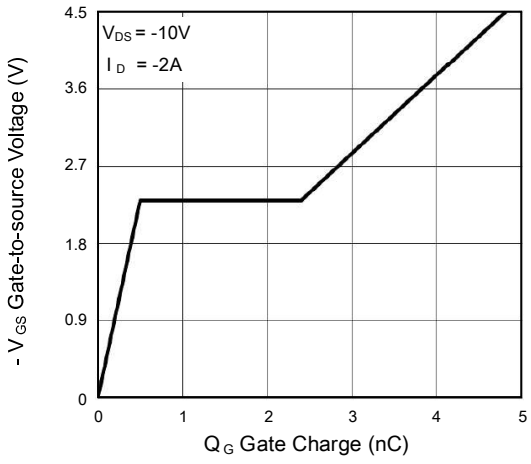


Fig.2 Gate Charge Characteristics

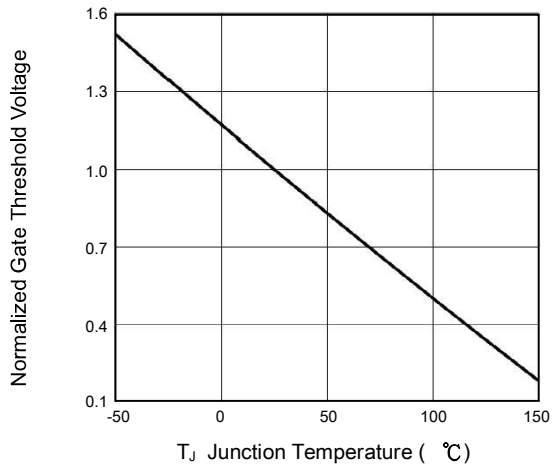


Fig.3 Normalized $V_{GS(th)}$ vs. T_J

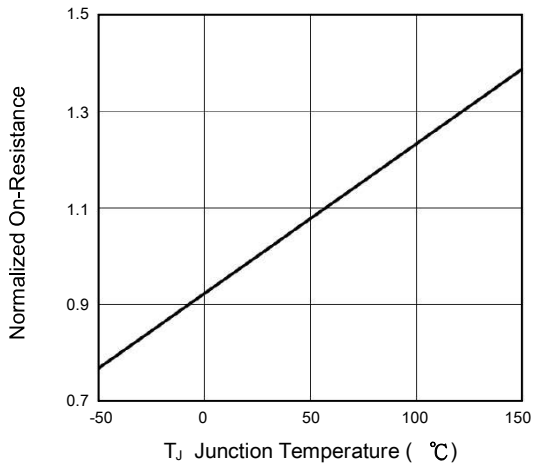


Fig.4 Normalized R_{DSON} vs. T_J

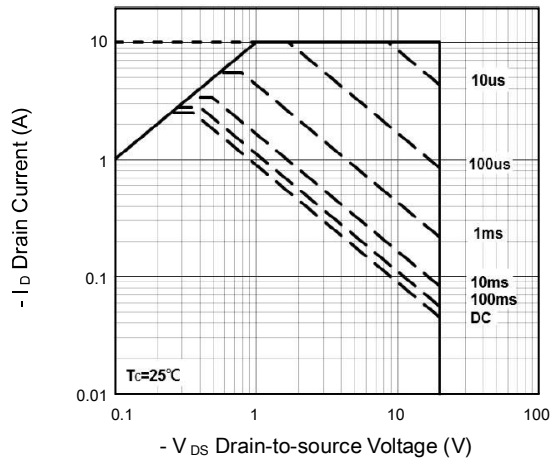


Fig.5 Safe Operating Area

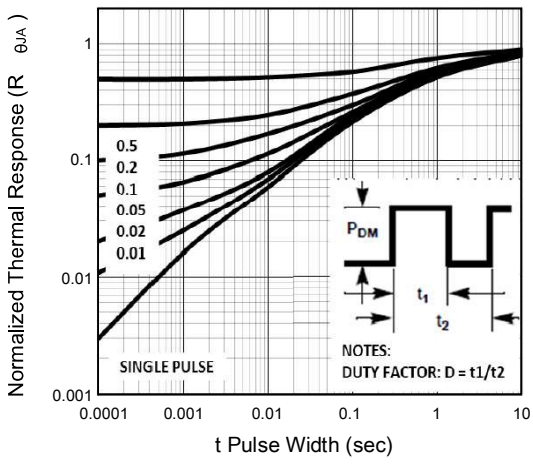


Fig.6 Transient Thermal Impedance

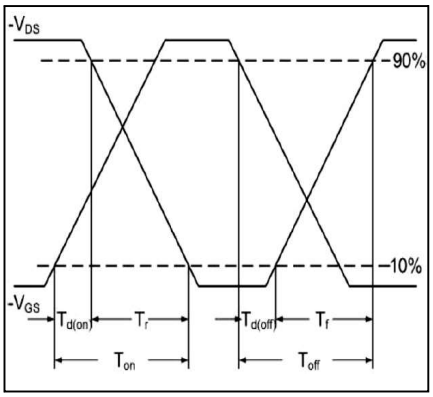


Fig.7 Switching Time Waveform

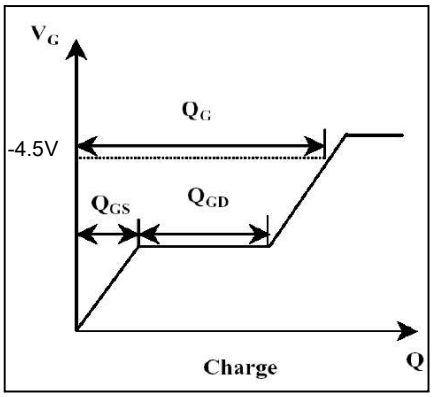
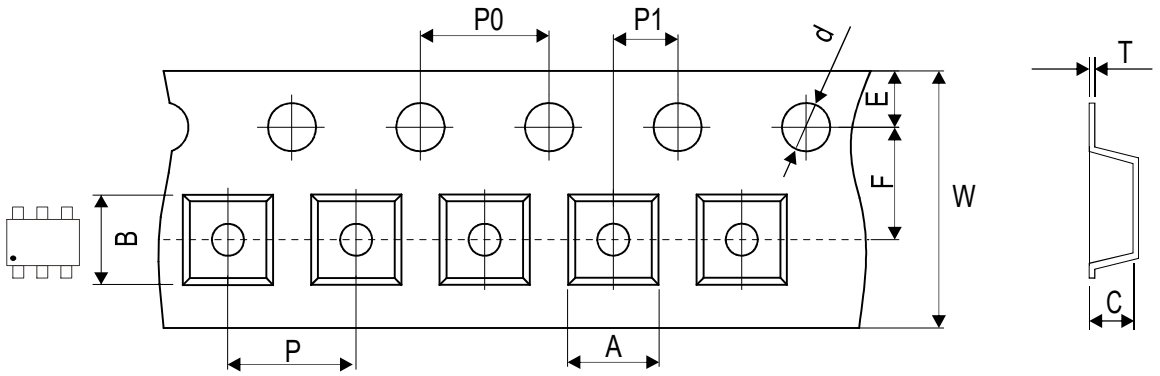
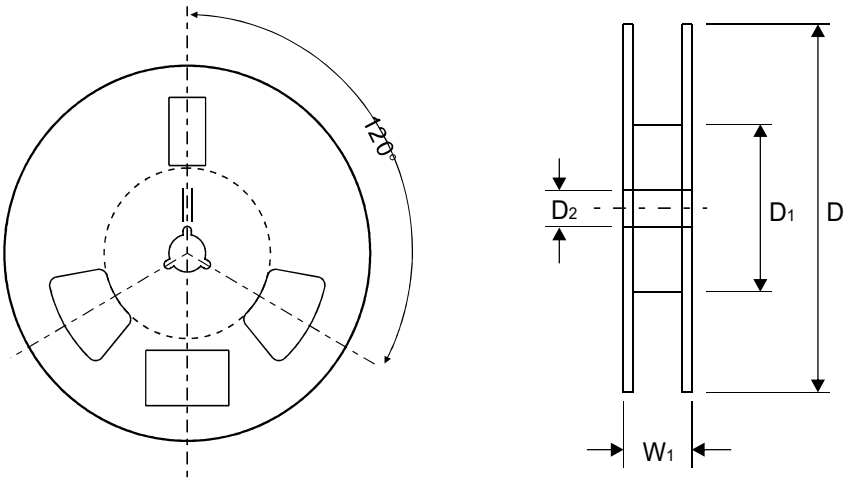


Fig.8 Gate Charge Waveform

Reel Taping Specification





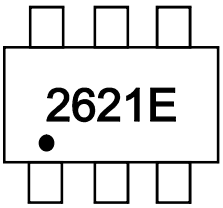
	SYMBOL	A	B	C	d	D	D1	D2
SOT-26	(mm)	3.17 ± 0.10	3.10 ± 0.10	1.10 ± 0.10	1.50 + 0.10 - 0.00	180.00 + 0.00 - 3.00	60.00 ± 0.50	13.00 ± 0.20
	(inch)	0.125 ± 0.004	0.122 ± 0.004	0.043 ± 0.004	0.059 + 0.001 - 0.00	7.087 + 0.00 - 0.118	2.362 ± 0.020	0.512 ± 0.008

	SYMBOL	E	F	P	P0	P1	T	W	W1
SOT-26	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.25 ± 0.03	8.00 + 0.30 - 0.10	12.30 + 1.00 - 0.30
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.010 ± 0.001	0.315 + 0.012 - 0.004	0.484 + 0.039 - 0.012

CMS02P02T6-HF

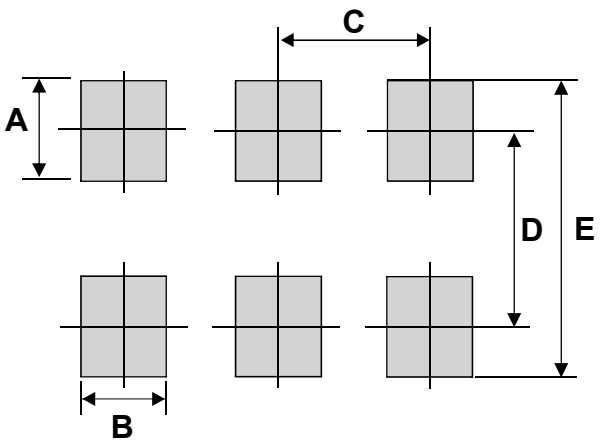
Marking Code

Part Number	Marking Code
CMS02P02T6-HF	2621E



Suggested PAD Layout

SIZE	TSOP-6	
	(mm)	(inch)
A	1.00 Min	0.039 Min
B	0.70 Min	0.028 Min
C	0.95 Min	0.037Min
D	2.40 Min	0.094Min
E	3.40 Min	0.134 Min



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-26	3,000	7