★ 100% EAS Guaranteed
★ Green Device Available
★ Super Low Gate Charge
★ Excellent CdV/dt effect decline
★ Advanced high cell density Trench technology

Product Summary

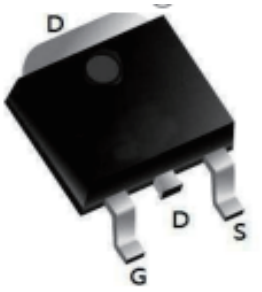
RoHS

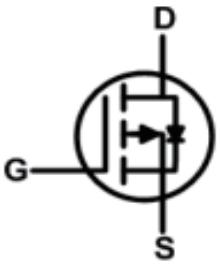
BVDSS	RDSON	ID
-20V	3.8mΩ	-80A

Description

The 80P02 is the high cell density trenched P-ch MOSFETs, which provides excellent RDSON and gate charge for most of the synchronous buck converter applications The 80P02 meets the RoHS and Green Product requirement,100% EAS guaranteed with full function reliability approved.

TO252 Pin Configuration





Absolute Maximum Ratings

Symbol	Parameter		Value	Unit
V_{DS}	Drain-Source Voltage		-20	V
V_{GS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current	T_C=25°C	-80	A
		T_C=100°C	-44	A
I_{DM}	Pulsed Drain Current[1]		-280	A
EAS	Single Pulse Avalanche Energy[2]		80	mJ
P_D	Total Power Dissipation	T_C=25°C	43.1	W
T_J, T_{STG}	Operating Junction and Storage Temperature Range		-55 to 150	°C
$R_{\theta JA}$	Thermal Resistance from Junction-to-Ambient[3]		65	°C/W
$R_{\theta JC}$	Thermal Resistance from Junction-to-Case		2.9	°C/W

Electrical Characteristics (T_J =25 °C unless otherwise specified)

Symbol	Parameter		Test condition	Min.	Typ.	Max.	Units
Static Characteristics							
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		V_{GS} = 0V, I_D = -250μA	-20	-	-	V
I_{GSS}	Gate-body Leakage current		V_{DS} = 0V, V_{GS} = ±12V	-	-	±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	T_J=25℃	V_{DS} = -20V, V_{GS} = 0V	-	-	-1	μA
		T_J=100℃		-	-	-100	μA
$V_{GS(th)}$	Gate-Threshold Voltage		V_{DS} = V_{GS}, I_D = -250μA	-0.4	-0.7	-1	V
$R_{DS(on)}$	Drain-Source On-Resistance[4]		V_{GS} = -4.5V, I_D = -10A	-	3.8	5.2	mΩ
			V_{GS} = -2.5V, I_D = -10A	-	5	6.8	mΩ
g_{fs}	Forward Transconductance[4]		V_{DS} = -4.5V, I_D = -10A	-	56	-	S
Dynamic Characteristics[5]							
C_{iss}	Input Capacitance		V_{DS} = -10V, V_{GS}=0V, f=1MHz	-	4770	-	pF
C_{oss}	Output Capacitance			-	665	-	
C_{rss}	Reverse Transfer Capacitance			-	570	-	
R_g	Gate Resistance		f =1MHz	-	9.6	-	Ω
Switching Characteristics[5]							
Q_g	Total Gate Charge		V_{GS} = -4.5V,V_{DS} = -10V, I_D= -10A	-	55	-	nC
Q_{gs}	Gate-Source Charge			-	5.2	-	
Q_{gd}	Gate-Drain Charge			-	10	-	
$t_{d(on)}$	Turn-On Delay Time		V_{GS} = -4.5V, V_{DD} = -10V, R_G = 3Ω, I_D= -10A	-	22	-	ns
t_r	Rise Time			-	38	-	
$t_{d(off)}$	Turn-Off Delay Time			-	110	-	
t_f	Fall Time			-	62	-	
Drain-Source Body Diode Characteristics							
V_{SD}	Diode Forward Voltage[4]		I_S = -10A, V_{GS} = 0V	-	-	-1.2	V
I_S	Continuous Source Current	T_C=25°C	-	-	-	-80	A

Notes:

1.Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150°C.

2.The EAS data shows Max. rating. The test condition is VDD= -25V, VGS= -10V, L= 0.4mH, IAS= -20A.

3.The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.

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

This value is guaranteed by design hence it is not included in the production test

Typical Electrical and Thermal Characteristics (Curves)

Figure1: Output Characteristics

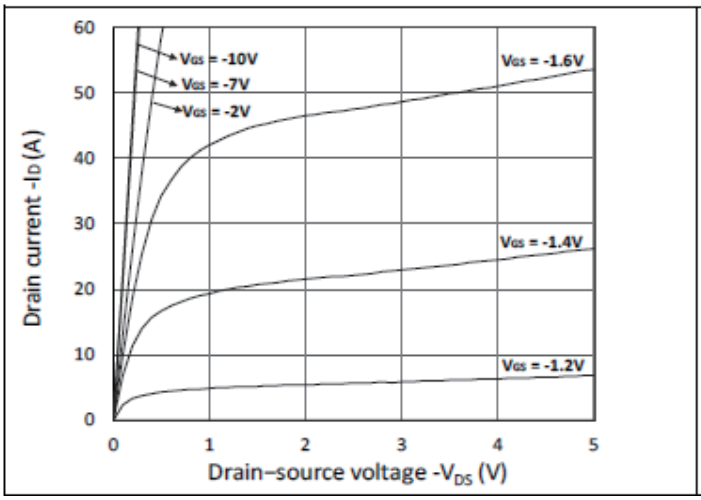


Figure 2: Typical Transfer Characteristics

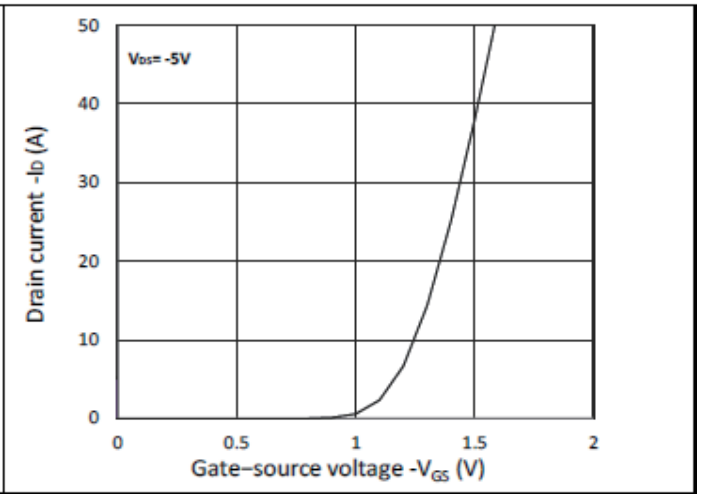


Figure 3:Forward Characteristics of Rever

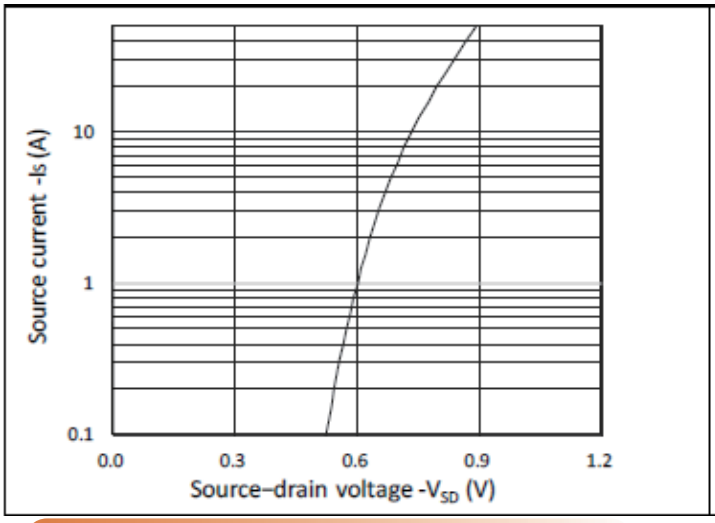


Figure 4: RDS(ON) vs. VGS

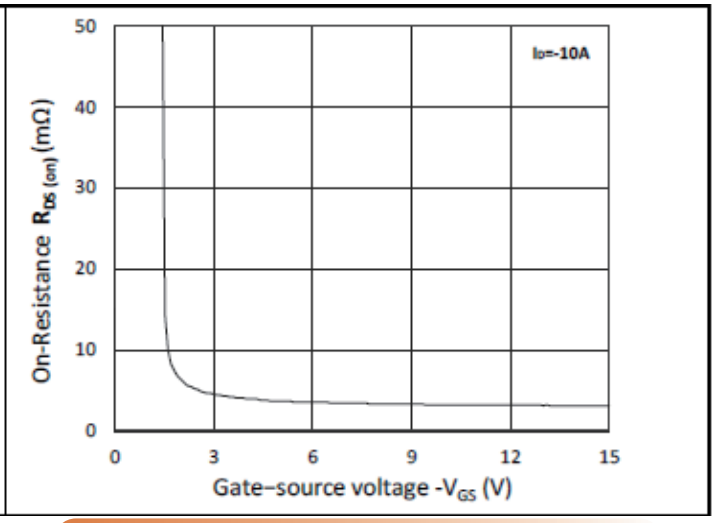


Figure 5: RDS(ON) vs. ID

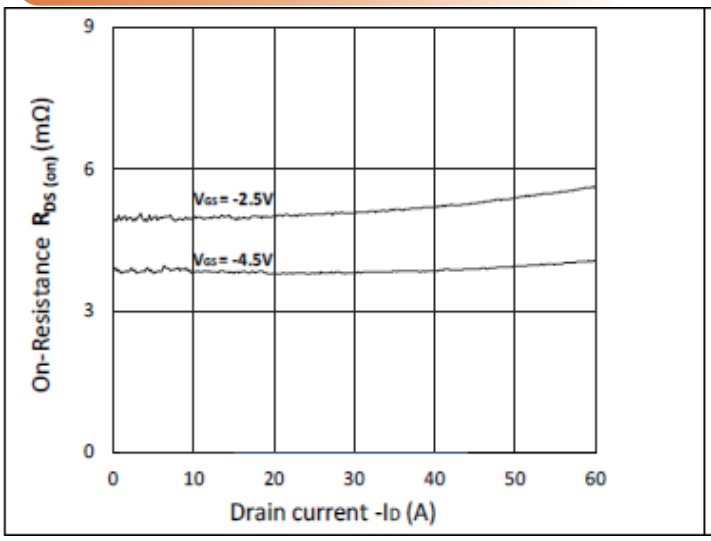
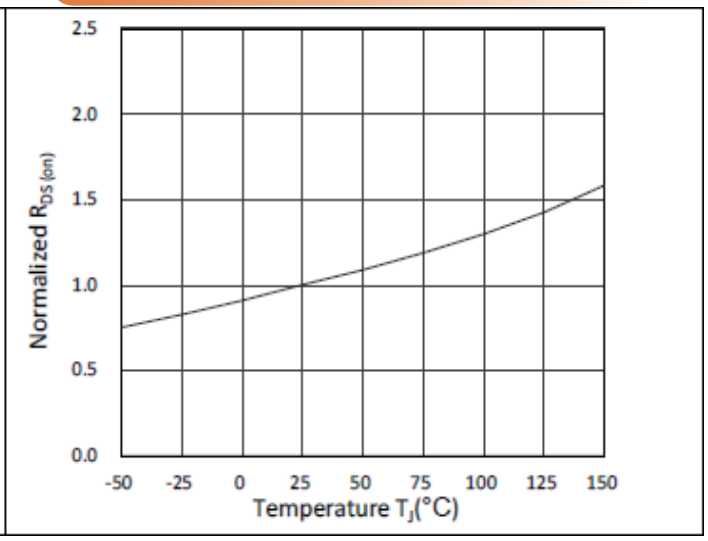


Figure 6:Normalized RDS(on) vs. Tempe



Typical Performance Characteristics

Figure 7: Capacitance Characteristics

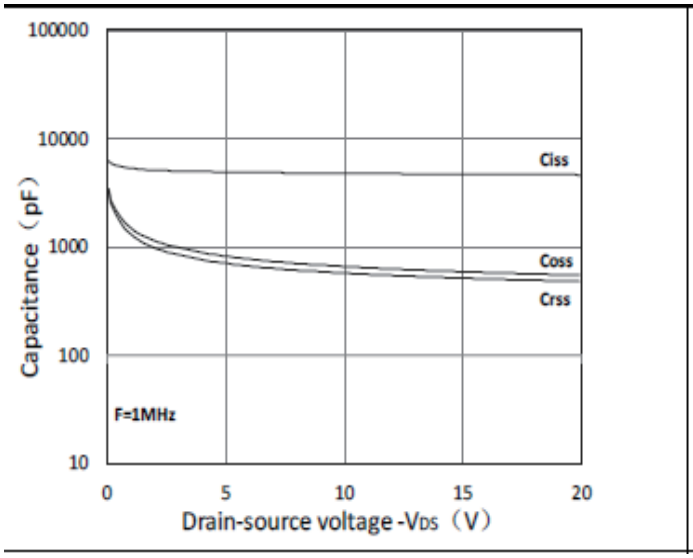


Figure 8: Gate Charge Characteristics

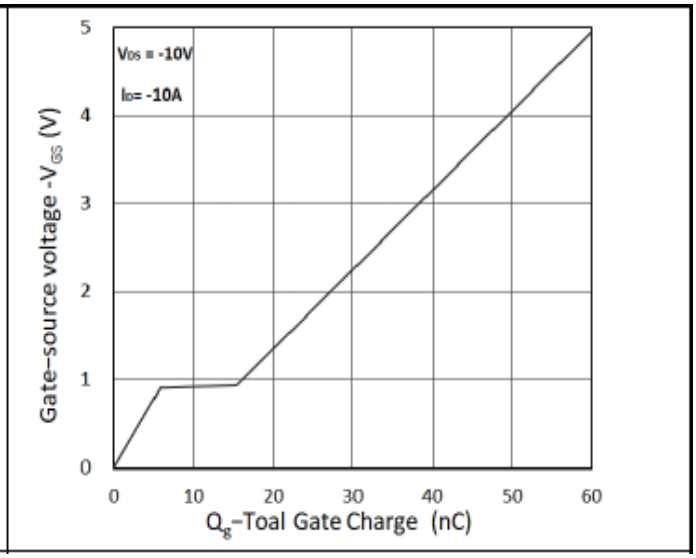


Figure 9: Power Dissipation

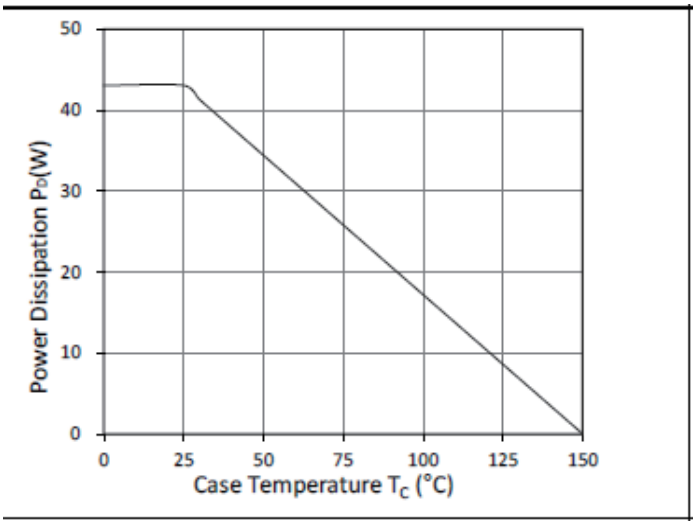


Figure 10: Safe Operating Area

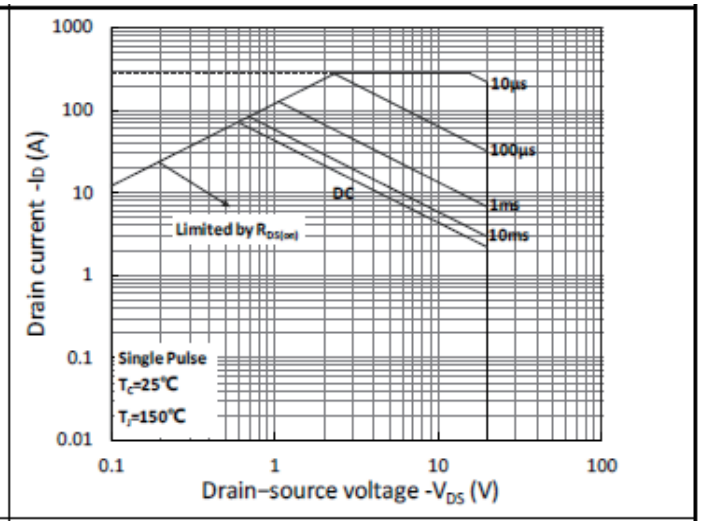
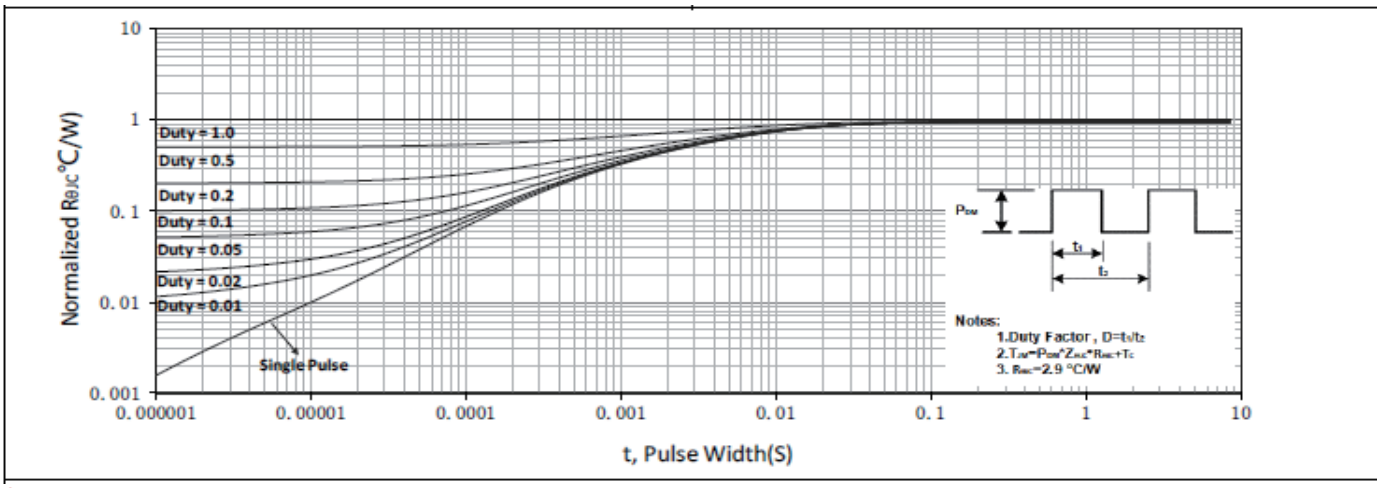
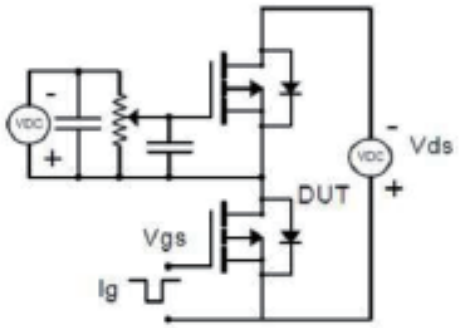


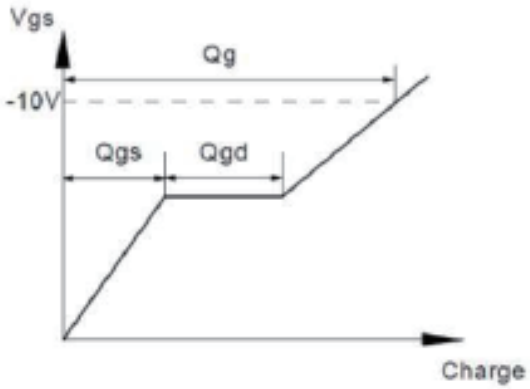
Figure 11: Normalized Maximum Transi



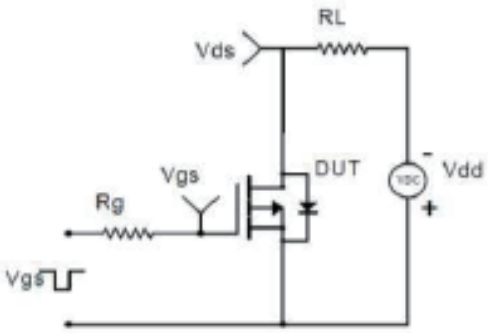
Test Circuit

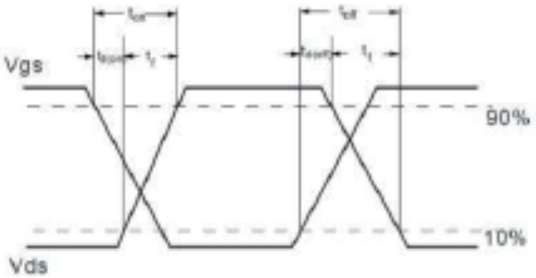
Gate Charge Test Circuit & Waveform



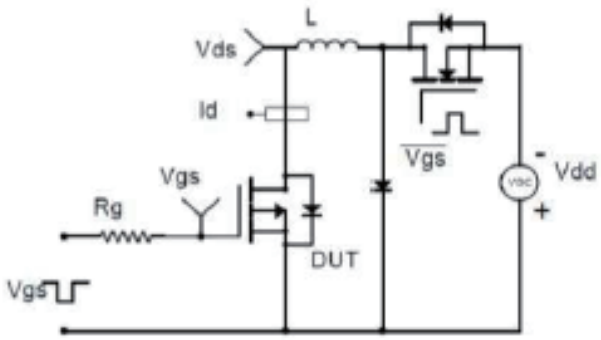


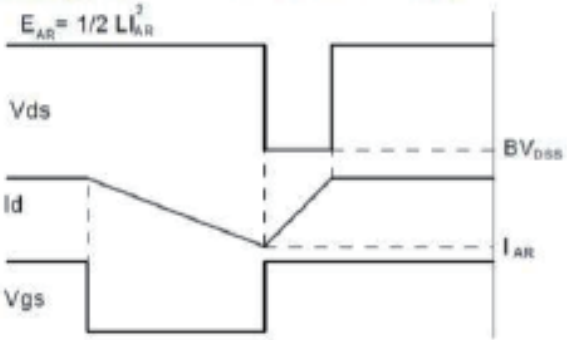
Resistive Switching Test Circuit & Waveforms



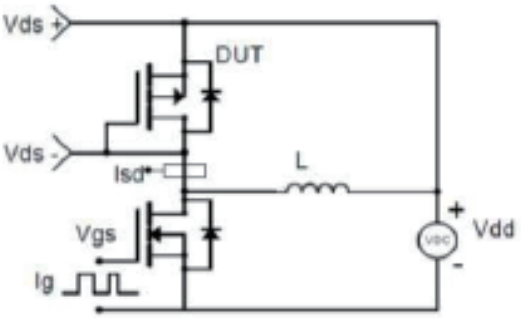


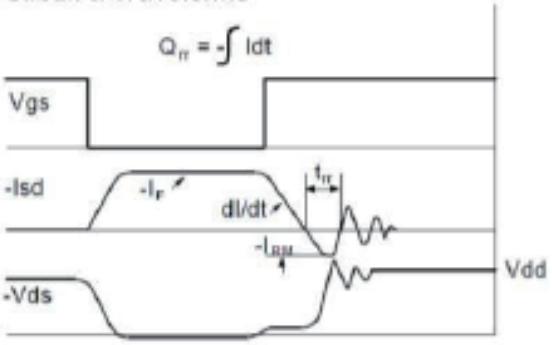
Unclamped Inductive Switching (UIS) Test Circuit & Waveforms





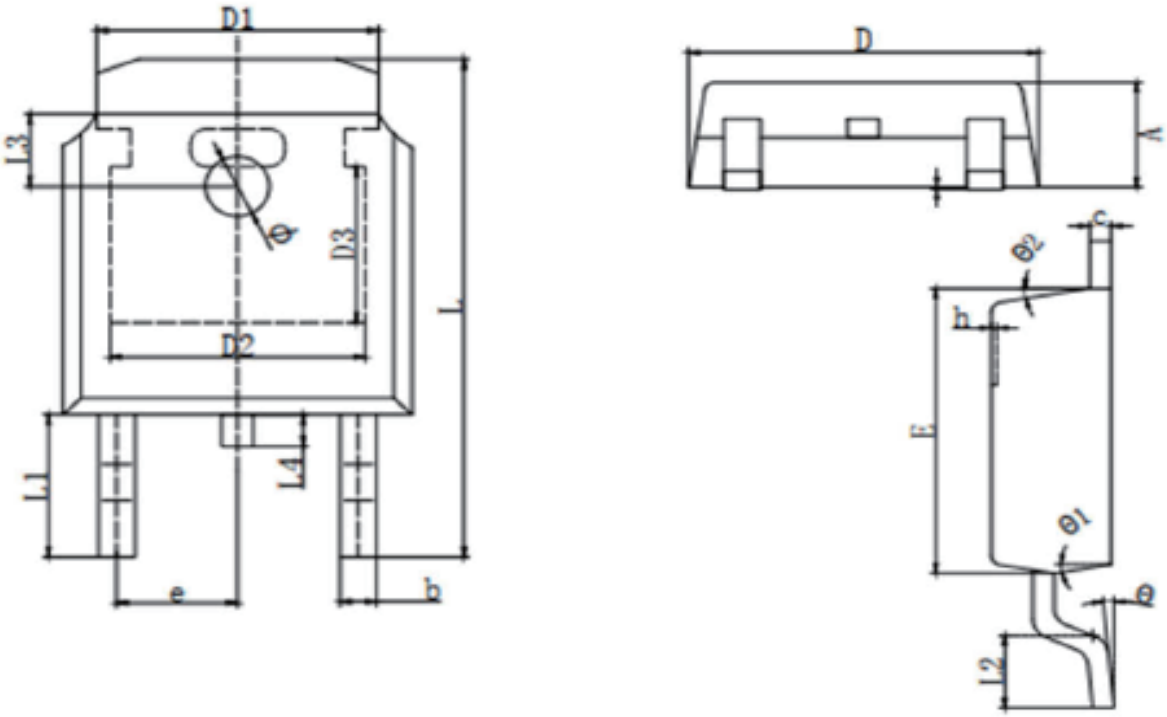
Diode Recovery Test Circuit & Waveforms





Package Mechanical Data TO 252

TO-252 Package outline



SYMBOL	MILLIMETER		SYMBOL	MILLIMETER	
	MIN	MAX		MIN	MAX
A	2.200	2.400	h	0.000	0.200
A1	0.000	0.127	L	9.900	10.30
b	0.640	0.740	L1	2.888 REF	
c	0.460	0.580	L2	1.400	1.700
D	6.500	6.700	L3	1.600 REF	
D1	5.334 REF		L4	0.600	1.000
D2	4.826 REF		φ	1.100	1.300
D3	3.166 REF		θ	0°	8°
E	6.000	6.200	θ1	9° TYP2	
e	2.286 TYP		θ2	9° TYP	

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by HL ***manufacturer:***

Other Similar products are found below :

IRFD120 JANTX2N5237 BUK455-60A/B MIC4420CM-TR VN1206L NDP4060 SI4482DY IPS70R2K0CEAKMA1 SQD23N06-31L-GE3 TK16J60W,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 DMN1053UCP4-7 SQJ469EP-T1-GE3 NTE2384 DMC2700UDMQ-7 DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 DMP22D4UFO-7B DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 STU5N65M6 DMN6022SSD-13 DMN13M9UCA6-7 DMTH10H4M6SPS-13 DMN2990UFB-7B IPB80P04P405ATMA2 2N7002W-G MCAC30N06Y-TP MCQ7328-TP NTMC083NP10M5L BXP7N65D BXP4N65F AOL1454G WMJ80N60C4 BXP2N20L BXP2N65D BXT1150N10J BXT1700P06M TSM60NB380CP ROG RQ7L055BGTCR DMNH15H110SK3-13 SLF10N65ABV2 BSO203SP BSO211P IPA60R230P6