● General Description

Advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. one N channel MOSFET and one P channel MOSFET in one package.

● Features

Trench technology

DS(ON)

●Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	34	° C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	180	° C/W
	T_{sold}	-	-	260	° C

●N Channel Absolute Maximum Ratings T_C =25

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D@T_C =25	6	A
	I_D@T_C =75	4.5	A
	I_D@T_C=100	3.8	A

Pulsed Drain Current	I_{DM}	18	A
Total Power Dissipation	$P_D@T_C=25$	3.6	W
Total Power Dissipation	$P_D@T_A=25$	0.69	W
Operating Junction Temperature	T_J	-55 to 150	
Storage Temperature	T_{STG}	-55 to 150	
Single Pulse Avalanche Energy	E_{AS}	27	mJ

●N Channel Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} =0V, I_D =250uA	40			V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} =V_{DS}, I_D =250uA	1.4	1.6	2.5	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=40V, V_{GS} =0V			1.0	uA
Gate- Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS} =0V			100	nA
Static Drain-source On Resistance		V_{GS}=10V, I_D=6A				
		V_{GS}=4.5V, I_D=4A				
Forward Transconductance	g_{FS}	V_{DS} =25V, I_D=5A				
Source-drain voltage	V_{SD}	Is=6A				

●N Channel Dynamic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz, V_{DS}=25V	-	805	-	pF
Output capacitance	Coss		-	94	-	
Reverse transfer capacitance	Crss		-	58	-	
Gate Risistance	Rg	f = 1MHz		1.2		
Total gate charge	Qg	V_{DD} = 15V, I_D = 6A, V_{GS} = 10V	-	12	-	nC
Gate - Source charge	Qgs		-	3.1	-	
Gate - Drain charge	Qgd		-	2.8	-	
Turn-ON Delay time	$t_{D(on)}$			6		ns
Turn-ON Rise time				16		ns
Turn-Off Delay time				28		ns
Turn-Off Fall time				13		ns
				11		ns
				24		nC

●P Channel Absolute Maximum Ratings T_C =25

Parameter	**Symbol**	Rating	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D@T_C =25	-5	A
	I_D@T_C =75	-3.8	A
	I_D@T_C=100	-3.1	A
Pulsed Drain Current	I_{DM}	-15	A
Total Power Dissipation	P_D@T_C=25	3.6	W
Total Power Dissipation	P_D@T_A=25	0.69	W
Operating Junction Temperature	T_J	-55 to 150	
Storage Temperature	T_{STG}	-55 to 150	

Turn-ON Delay time	$t_{D(on)}$			13.2		ns
Turn-ON Rise time				5.5		ns
Turn-Off Delay time				42		ns
Turn-Off Fall time				47		ns
				21		ns
				24		nC

●N Channel characteristics curve

Fig.1 Power Dissipation Derating Curve

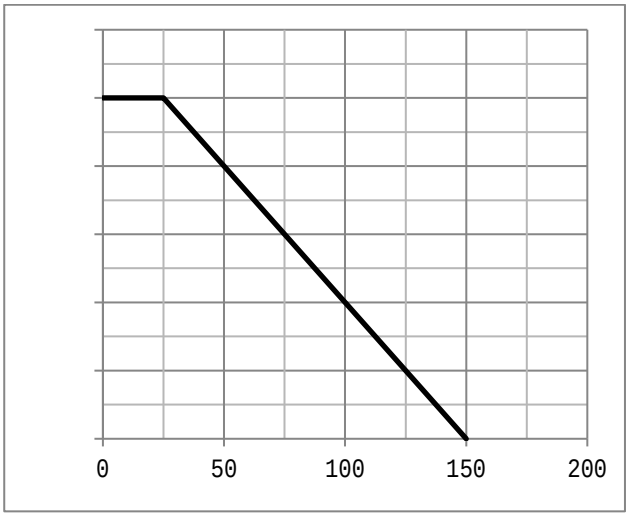


Fig.2 Typical output Characteristics

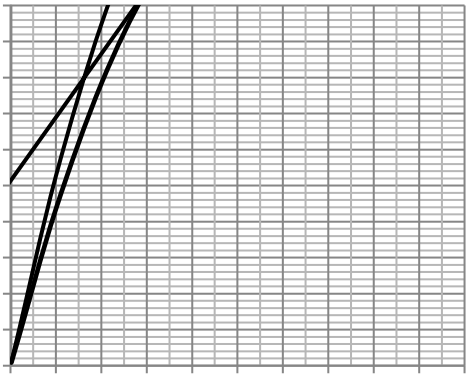


Fig.3 Threshold Voltage V.S Junction Temperature

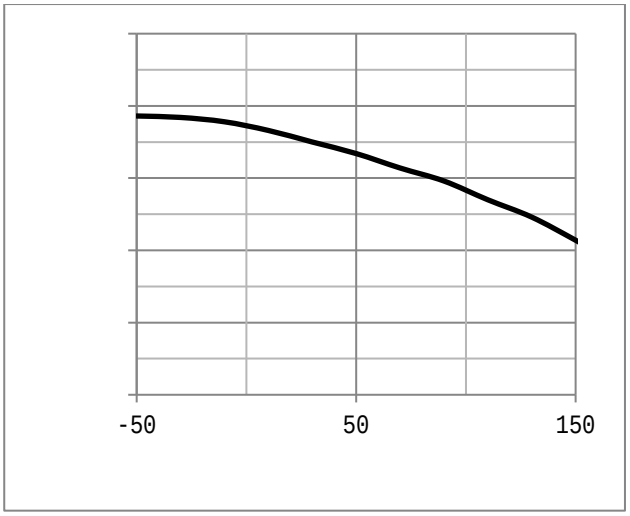
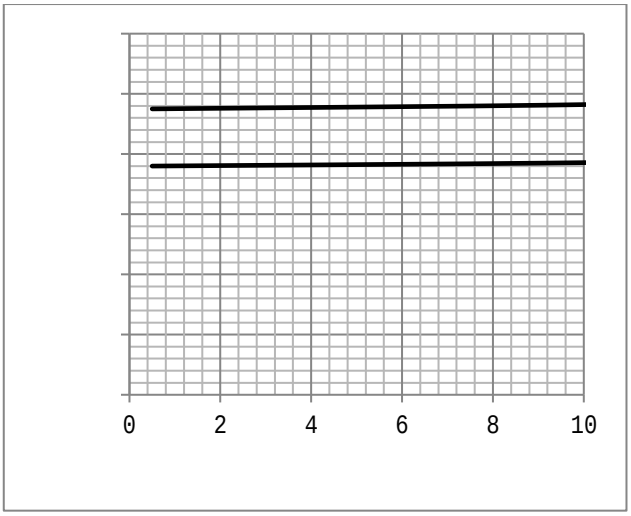
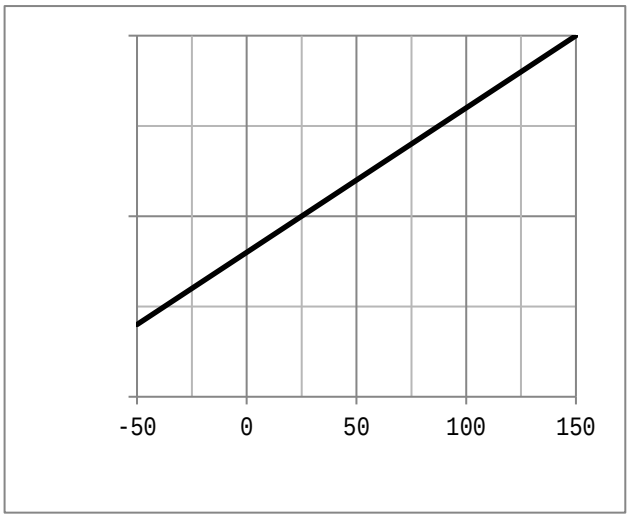


Fig.4 Resistance V.S Drain Current





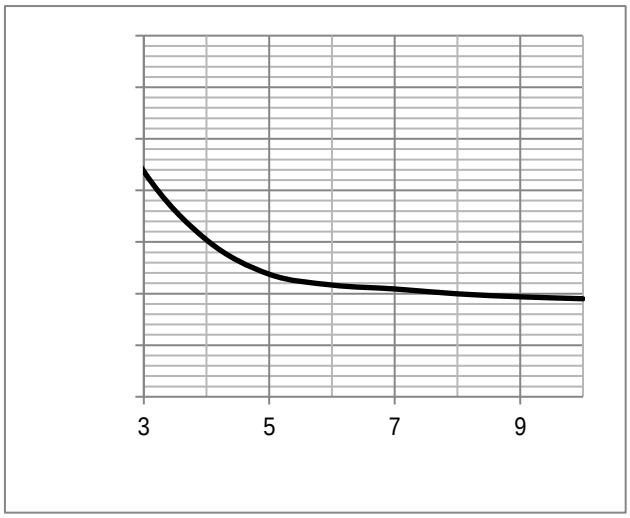
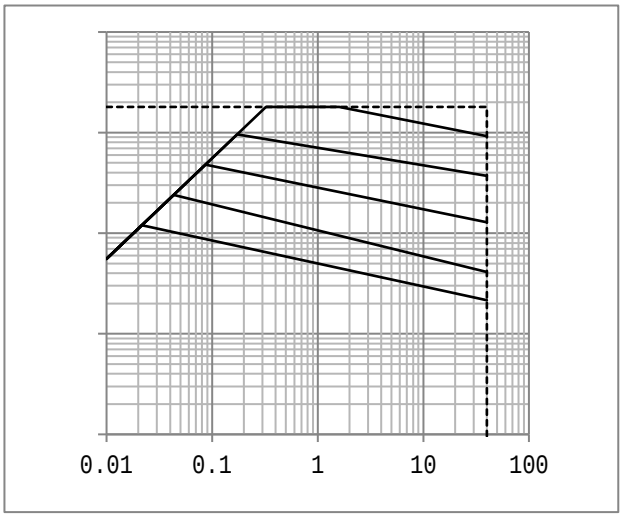
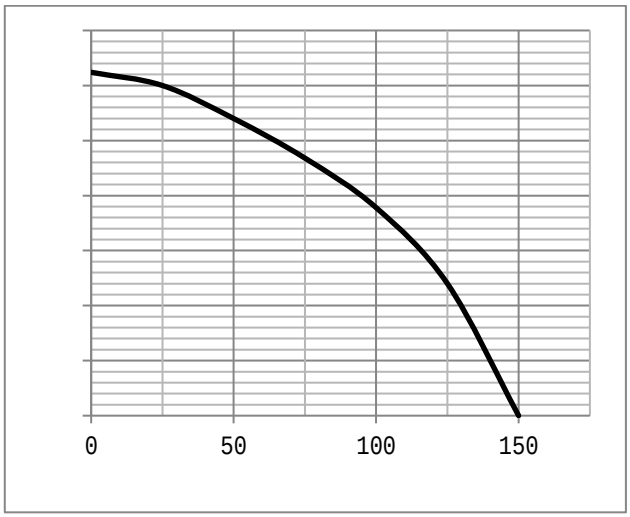
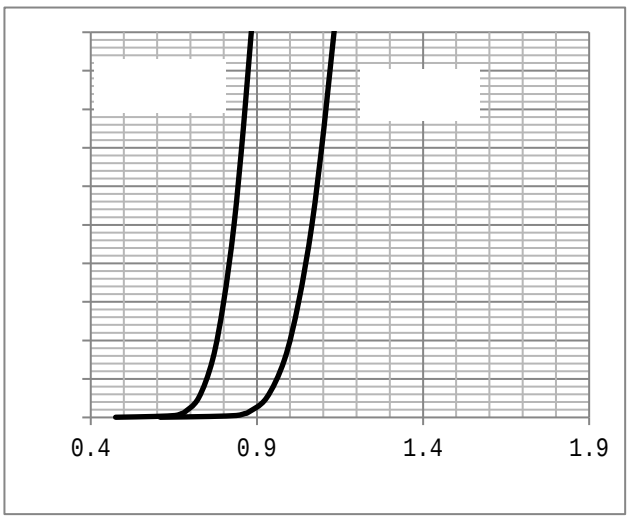


Fig.7 SOA Maximum Safe Operating Area

Fig.8 ID-Junction Temperature







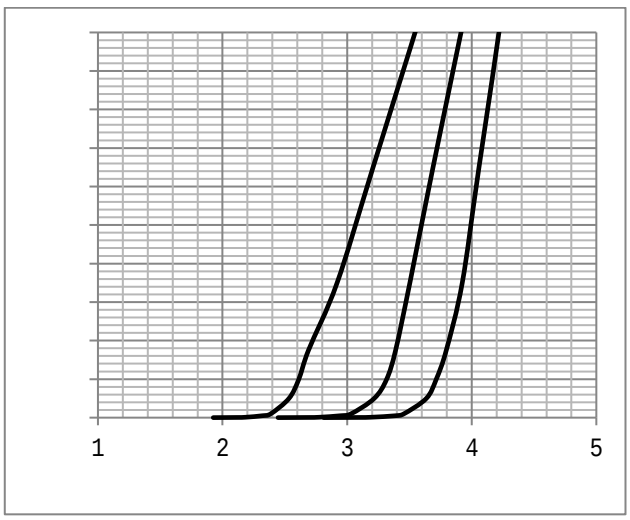
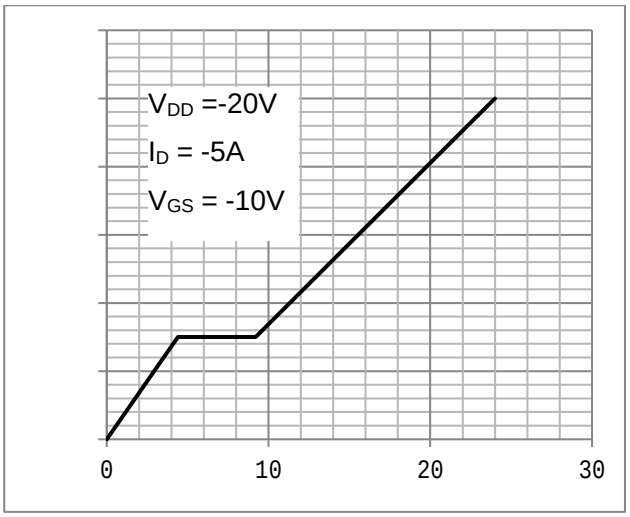
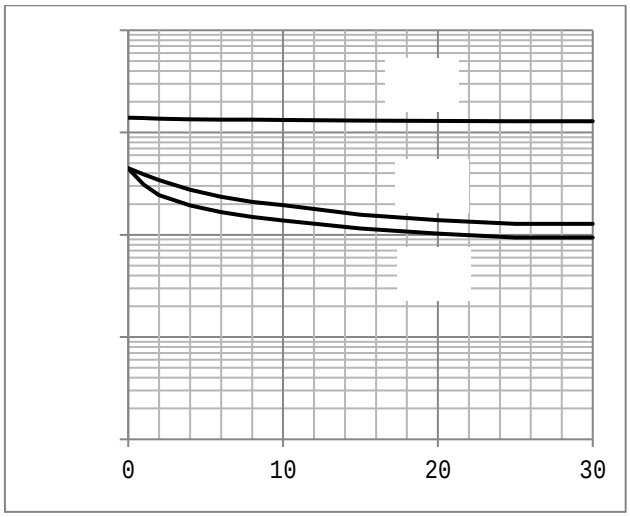


Fig.12





●Dimensions(SOP8)

Unit: mm

SYMBOL	min	TYP	max	SYMBOL	min		max
A	4.80		5.25	C	1.30		1.75
A1	0.37		0.49	C1	0.55		0.75
A2		1.27		C2	0.55		0.65
A3		0.41		C3	0.05		0.20
B	5.80		6.20	C4	0.10	0.20	0.23
B1	3.80		4.10	D		1.05	
B2		5.00		D1	0.40		0.62