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VISHAY IRF740 & Silan SVD740T Test Report V1.01

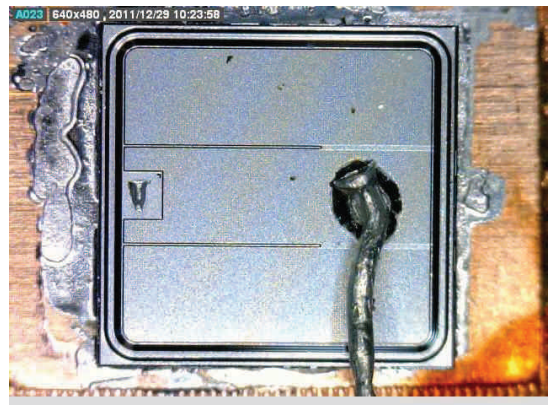
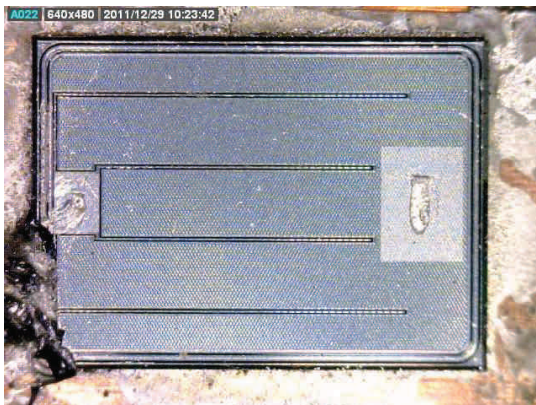
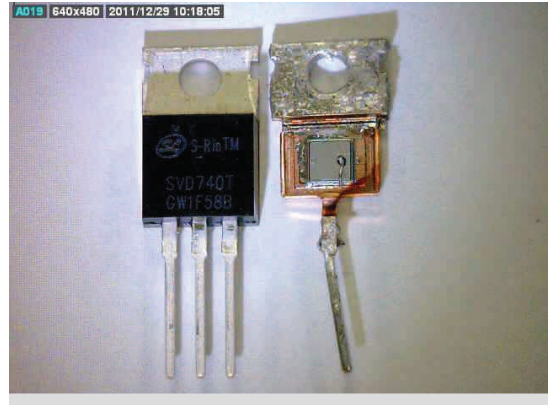
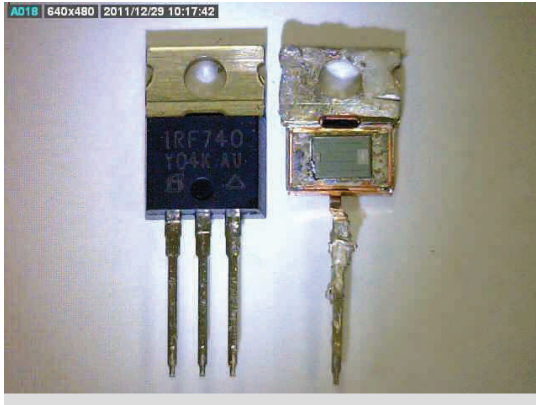
VISHAY IRF740 10A/400V 0.55 Ω (P/N:442-IRF7-400-00R)
 Silan SVD740T 10A/400V 0.60 Ω

		VISHAY IRF740	Silan SVD740T
1	V _{DSS} (Drain to Source Breakdown Voltage)	400V min. (V _{GS} =0V, I _D =250uA)	400V min. (V _{GS} =0V, I _D =250uA)
2	R _{DS (ON)} (Static Drain-To-Source On-Resistance)	0.55 Ω max. (V _{GS} =10V, I _D =6A)	0.60 Ω max. (0.45 Ω typ.) (V _{GS} =10V, I _D =5A)
3	P _D (Power dissipation)	125W (T _C =25°C)	160W (T _C =25°C)
4	I _D (Continuous Drain Current)	10A (T _C =25°C) 6.3A (T _C =100°C)	10A (T _C =25°C)
5	I _{DM} (Pulsed Drain Current)	40A	n/a
6	E _{AS} (Single Pulse Avalanche Energy)	520mJ (I _{AS} =10A, L=9.1mH, V _{DD} =50V)	384mJ (R _G =25 Ω , L=30mH, V _{DD} =250V, I _{AS} =4.11A)
7	E _{AR} (Repetitive Avalanche Energy)	13mJ	n/a
8	V _{GS (th)} (Gate Threshold Voltage)	2.0V~4.0V (V _{DS} =V _{GS} , I _D =250uA)	2.0V~4.0V (V _{DS} =V _{GS} , I _D =250uA)
9	C _{iss} (Input Capacitance)	1400pF typ. (V _{GS} =0V, V _{DS} =25V, f=1Mhz)	1035pF typ. (V _{GS} =0V, V _{DS} =25V, f=1Mhz)
10	Q _g (Total Gate Charge)	63nC max. (I _D =10A, V _{DS} =320V, V _{GS} =10V)	26.8nC typ. (I _D =10A, V _{DS} =320V, V _{GS} =10V)
11	I _S (Body diode Continuous Source Current)	10A max.	10A max.
12	I _{SM} (Body diode Pulsed Source Current)	40A max.	32A max.
13	T _{RR} (Body diode Reverse Recovery Time)	370ns typ. (790ns max.) (I _F =10A, di/dt=100A/us, T _J =25°C)	270ns typ. (I _S =10A, di/dt=100A/us, V _{GS} =0V)
14	dv/dt (Peak Diode Recovery)	4.0V/ns	n/a
15	R _{θ JC} (Thermal Resistance ,Junction To Case)	1.0°C/W max.	0.64°C/W
16	T _J (Junction Temperature Range)	-55 °C ~ +150 °C	-55 °C ~ +150 °C

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		VISHAY IRF740	Silan SVD740T
1	DICE SIZE(D*L)	5.16 *3.72(19.20)	4.03 * 3.85(15.52)
2		1.27mm	1.31mm

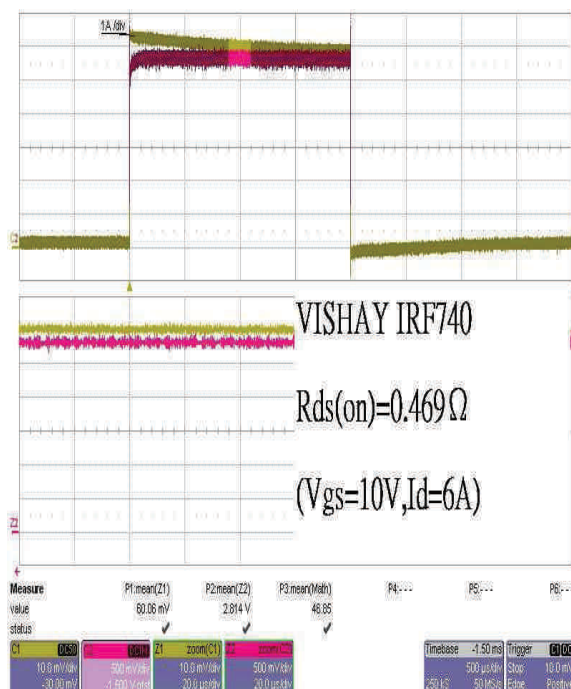


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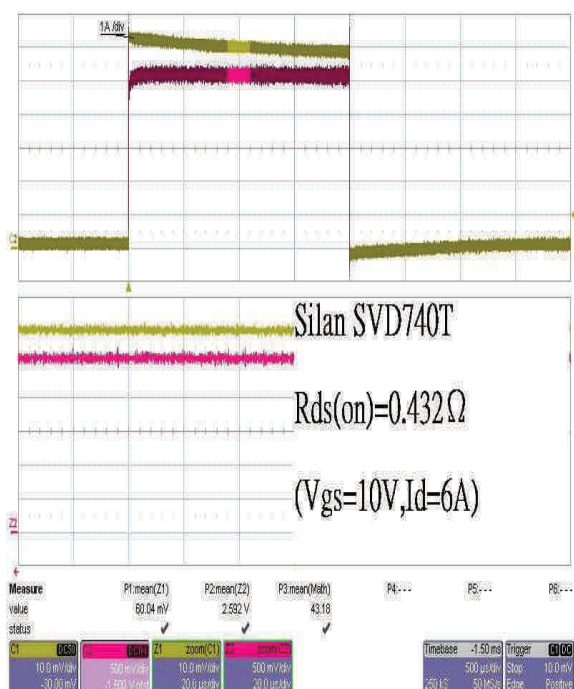
VISHAY IRF740 & Silan SVD740T Test Report V1.01

(S1 Sample1)

		VISHAY IRF740	Silan SVD740T
	DateCode	Y04KAU	GW1F58B
1	$V_{GS(th)}$ ($V_{DS}=V_{GS}$, $I_D=250\mu A$)	S1 : 2.88V S2 : 2.88V S3 : 2.87V S4 : 2.93V	S1 : 2.78V S2 : 2.82V S3 : 2.78V S4 : 2.80V
2	V_{DSS} ($V_{GS}=0V$, $I_D=250\mu A$)	S1 : 448V S2 : 440V S3 : 449V S4 : 449V	S1 : 422V S2 : 423V S3 : 422V S4 : 422V
3	$R_{DS(on)}$ ($V_{GS}=10V$, $I_D=6A$) $R_{IE}=3\Omega$	S1 : 0.469Ω S2 : 0.449Ω S3 : 0.445Ω S4 : 0.468Ω	S1 : 0.432Ω S2 : 0.440Ω S3 : 0.434Ω S4 : 0.437Ω
	LeCroy WaveSurfer 45 Tektronix TMA502A 、 FLUKE187		



IRF740 $R_{DS(on)}$

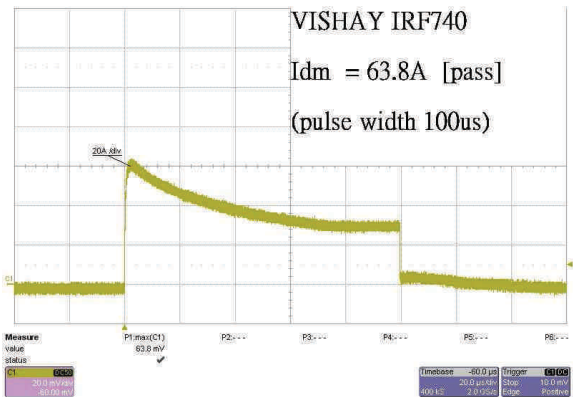


SVD740T $R_{DS(on)}$

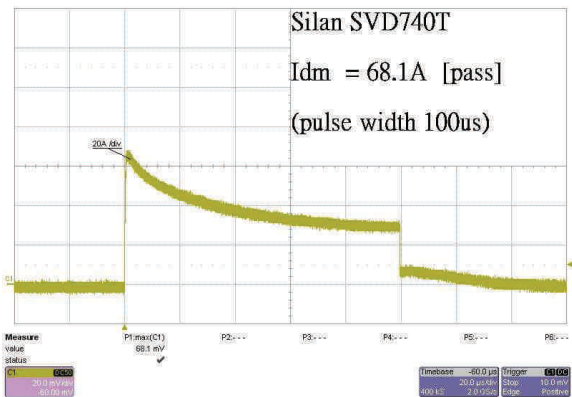
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VISHAY IRF740 & Silan SVD740T Test Report V1.01

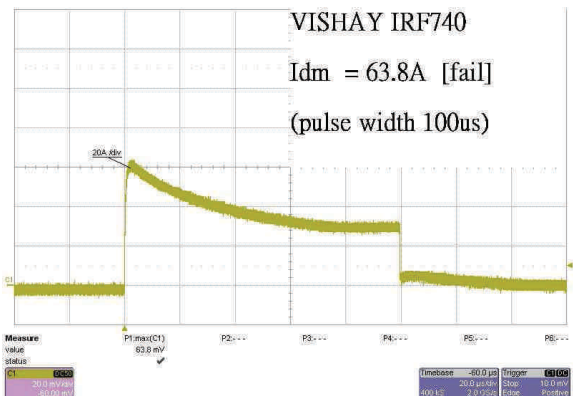
		VISHAY IRF740	Silan SVD740T
	DateCode	Y04KAU	GW1F58B
4	I_{DM} (Pulsed Drain Current) [100us] $R_{IE}=0.027\Omega$	S1 : 63.8A(pass) S1 : 63.8A(fail)	S1 : 68.1A(pass) S1 : 68.8A(fail)
	LeCroy WaveSurfer 454 Tektronix TMA502A FLUKE187		



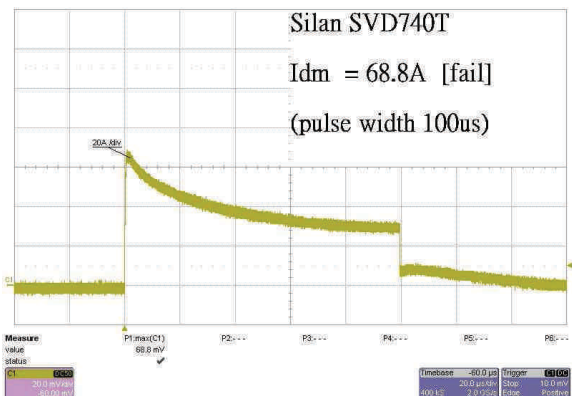
IRF740 I_{DM} [pass]



SVD740T I_{DM} [pass]



IRF740 I_{DM} [fail]



SVD740T I_{DM} [fail]

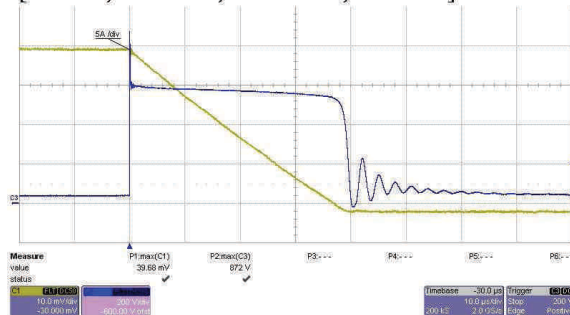
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VISHAY IRF740 & Silan SVD740T Test Report V1.01

		VISHAY IRF740	Silan SVD740T
	DateCode	Y04KAU	GW1F58B
5	E_{AS} (Single Pulse Avalanche Energy) [V _{GS} =10V, 2ms , noise filter =3bits]	S4 : 207mJ(pass) S4 : 208mJ(fail)	S2 : 223mJ(pass) S2 : 255mJ(fail)
	LeCroy WaveSurfer 454 Tektronix TMA502A 、 FLUKE187		

VISHAY IRF740 Eas=207mJ [pass]

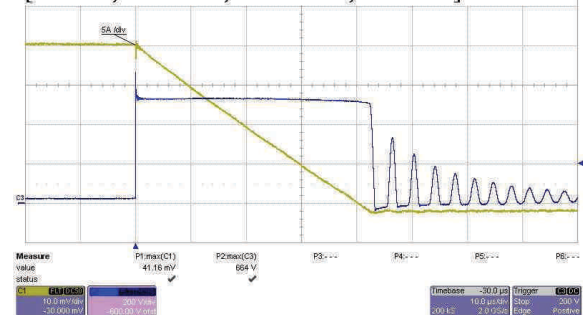
[L=1mH,Ias=19.8A,Vdss=872V,Vdd=48V]



IRF740 E_{AS}[pass]

Silan SVD740T Eas=223mJ [pass]

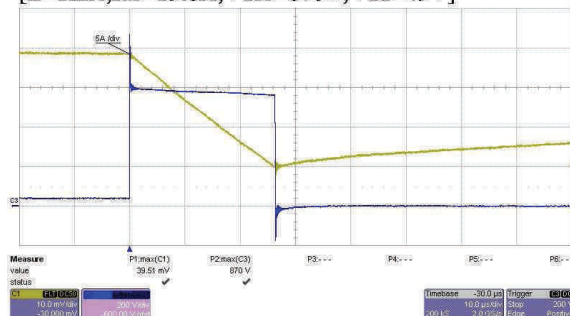
[L=1mH,Ias=20.6A,Vdss=664V,Vdd=33V]



SVD740T E_{AS}[pass]

VISHAY IRF740 Eas=208mJ [fail]

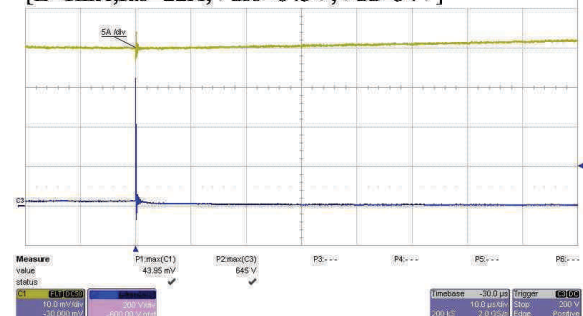
[L=1mH,Ias=19.8A,Vdss=870V,Vdd=49V]



IRF740 E_{AS}[fail]

Silan SVD740T Eas=255mJ [fail]

[L=1mH,Ias=22A,Vdss=645V,Vdd=34V]

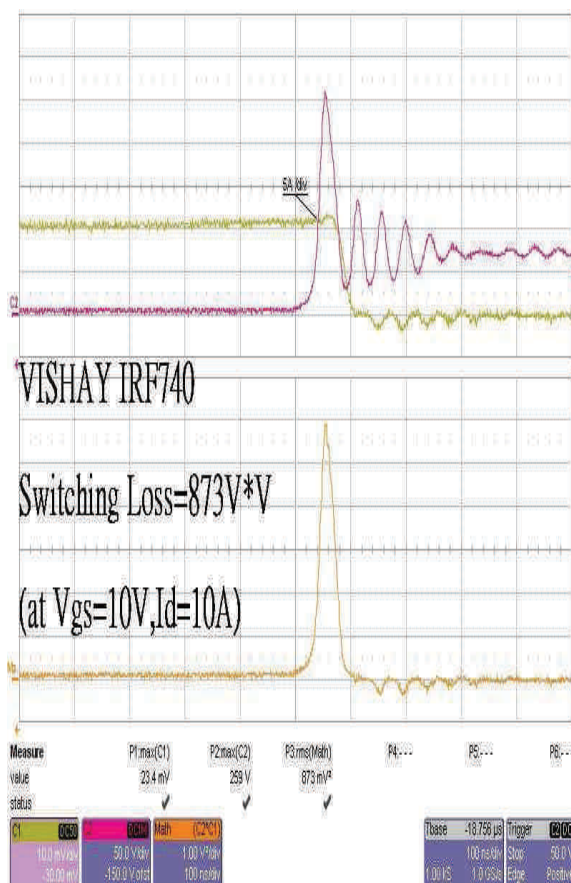


SVD740T E_{AS}[fail]

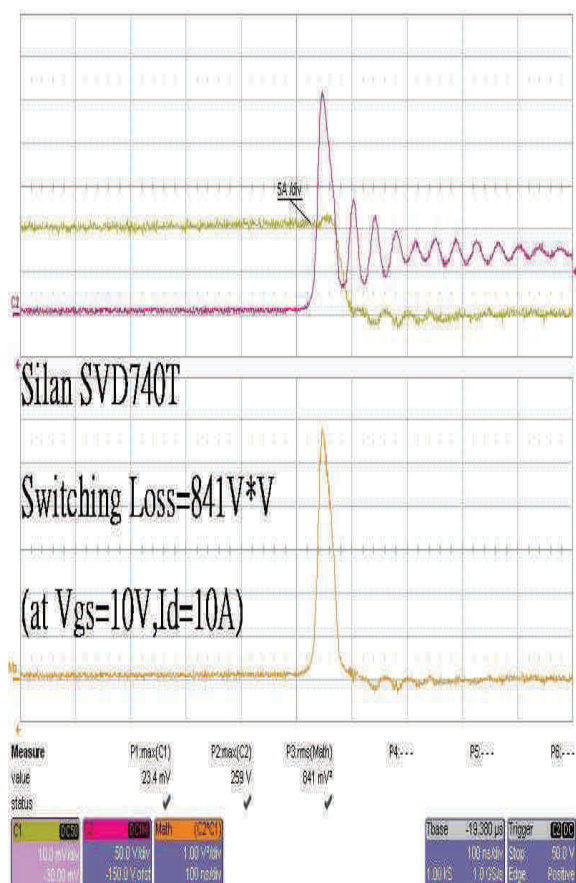
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VISHAY IRF740 & Silan SVD740T Test Report V1.01

		VISHAY IRF740	Silan SVD740T
	DateCode	Y04KAU	GW1F58B
6	Switching Loss [$I_D = 10A$]	S1 : 873V*V S2 : 839V*V S3 : 862V*V S4 : 742V*V	S1 : 841V*V S2 : 845V*V S3 : 870V*V S4 : 865V*V
	LeCroy WaveSurfer 454	Tektronix TMA502A	
	FLUKE187		



IRF740 Switching Loss



SVD740T Switching Loss

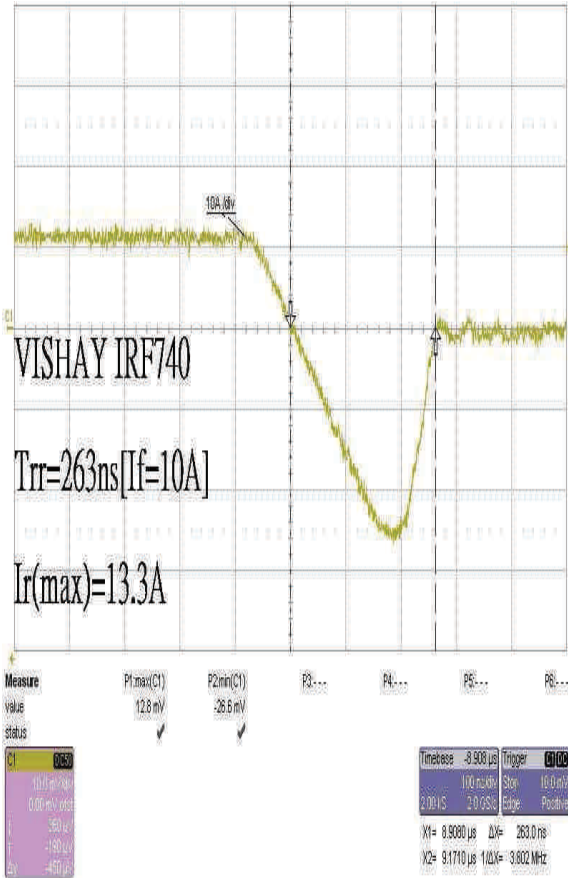
		VISHAY IRF740	Silan SVD740T
	DateCode	Y04KAU	GW1F58B
7	I _{SM} [4700u to 4700u]	S3 : 246A(35V pass) S3 : 328A(40V fail)	S3 : 328A(40V pass) S3 : 369A(45V fail)
	LeCroy WaveSurfer 454 Tektronix TMA502A FLUKE187		



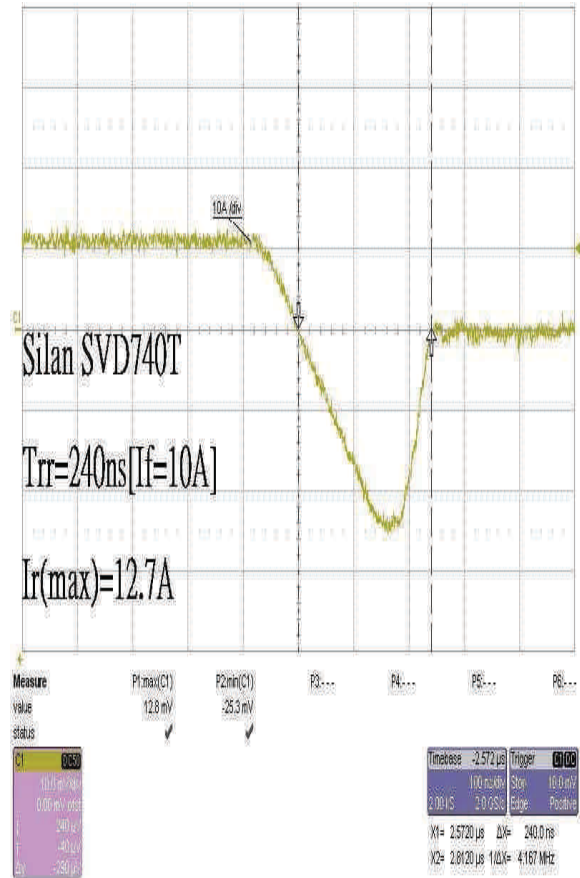
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		VISHAY IRF740	Silan SVD740T
	DateCode	Y04KAU	GW1F58B
8	T_{RR} 、 $I_R(max)$ [$I_F = 10A$]	S1 : 263ns 、 13.3A S2 : 264ns 、 13.2A S3 : 265ns 、 13.2A S4 : 263ns 、 13.2A	S1 : 240ns 、 12.7A S2 : 244ns 、 12.8A S3 : 249ns 、 13.0A S4 : 242ns 、 13.2A
	FLUKE187	LeCroy WaveSurfer 454	Tektronix TMA502A



IRF740 T_{RR} 、 $I_R(max)$



SVD740T T_{RR} 、 $I_R(max)$

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		VISHAY IRF740	Silan SVD740T	
	DateCode	Y04KAU	GW1F58B	
1	DICE SIZE(D*L)	5.16 *3.72 (19.20)	4.03 * 3.85 (15.52)	
2		1.27mm	1.31mm	
3	$V_{GS(th)}$ ($V_{DS}=V_{GS}$, $I_D=250\mu A$)	2.89V	2.80V	
4	V_{DSS} ($V_{GS}=0V$, $I_D=250\mu A$)	447V	422V	
5	$R_{DS(on)}$ ($V_{GS}=10V$, $I_D=6A$)	0.458 Ω	0.436 Ω	
6	I_{DM} [100us]	63.8A(pass) 63.8A(fail)	68.1A(pass) 68.8A(fail)	
7	E_{AS} [$V_{GS}=10V$, 2ms]	207mJ(pass) 208mJ(fail)	223mJ(pass) 255mJ(fail)	
8	Switching Loss [$I_D=10A$]	829V*V	855V*V	
9	I_{SM} [4700u to 4700u]	246A(35V pass) 328A(40V fail)	447A(40V pass) 475A(45V fail)	
10	T_{RR} [$I_F=10A$]	264ns	244ns	
11	$I_R(max)$ [$I_F=10A$]	13.2A	12.9A	
12	C_{iss} (Input Capacitance)	1400 pF	1035 pF	
13	P_D (Power dissipation)	125W (25°C)	160W (25°C)	
