



MCH6353

P-Channel Power MOSFET -12V, -6.0A, 35mΩ, Single MCPH6

ON Semiconductor®
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Features

- On-resistance $R_{DS(on)} = 29\text{m}\Omega$ (typ.)
- Halogen free compliance
- 1.5V drive
- Protection diode in

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

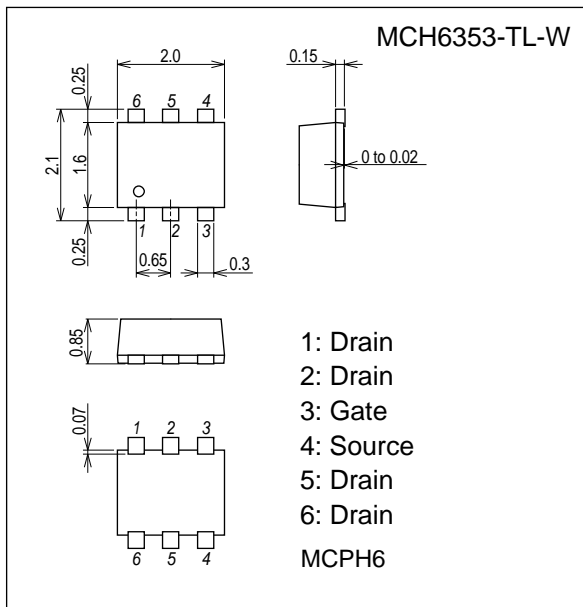
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DS}		-12	V
Gate to Source Voltage	V_{GS}		± 10	V
Drain Current (DC)	I_D		-6.0	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-24	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate ($1500\text{mm}^2 \times 0.8\text{mm}$)	1.4	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

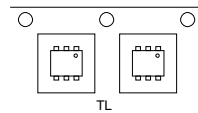
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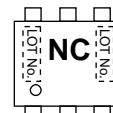
Ordering & Package Information

Device	Package	Shipping	note
MCH6353-TL-W	MCPH6 SC-88, SC-70-6, SOT-363	3,000 pcs. / reel	Pb-Free and Halogen Free

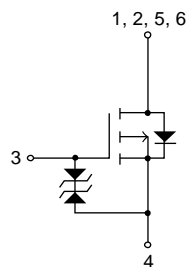
Packing Type: TL



Marking



Electrical Connection

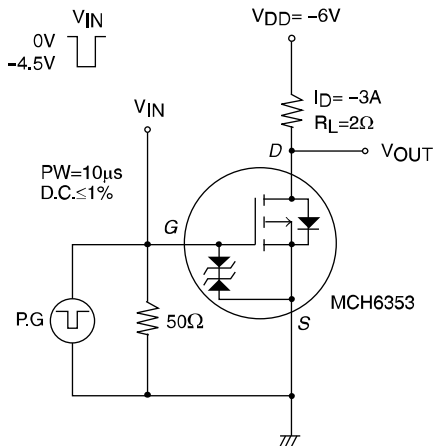


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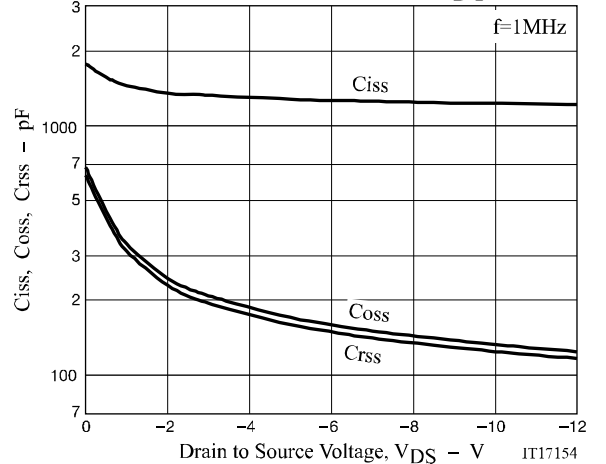
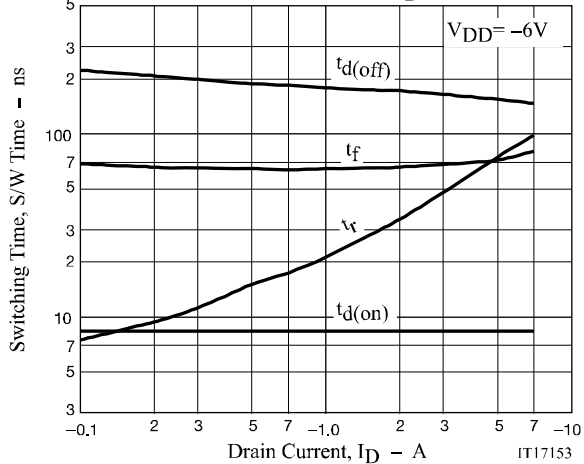
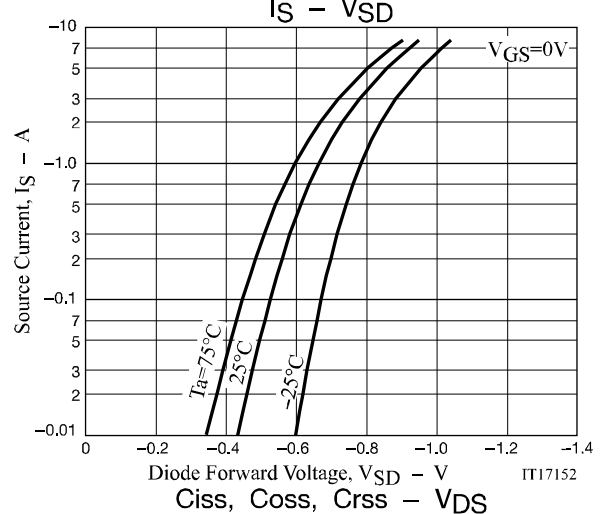
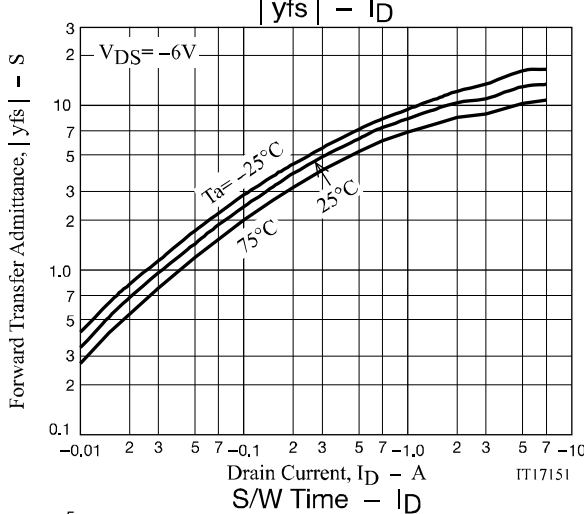
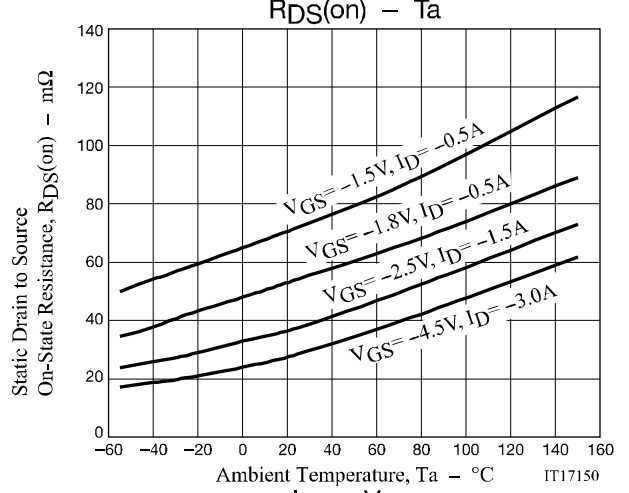
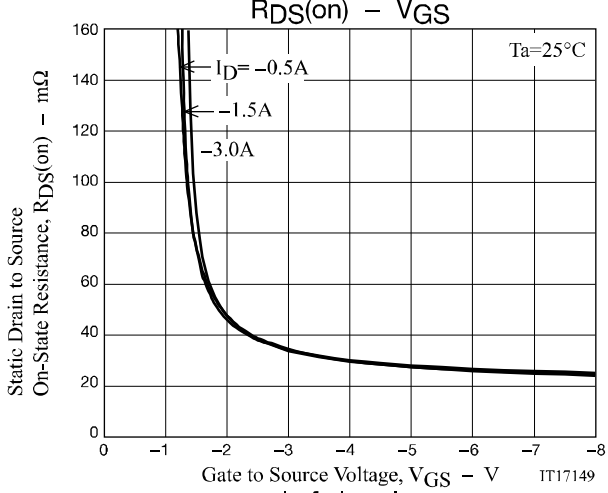
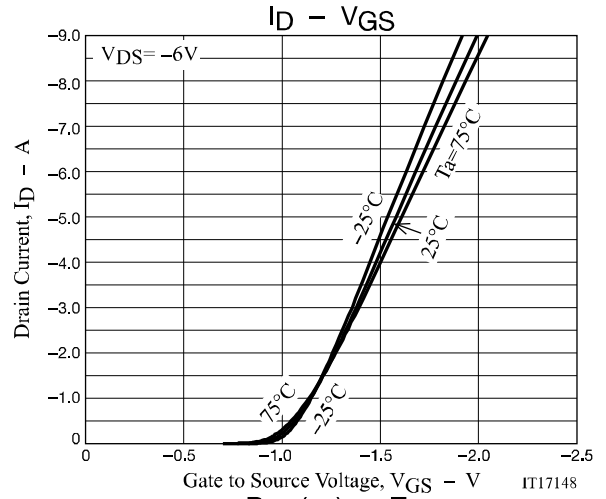
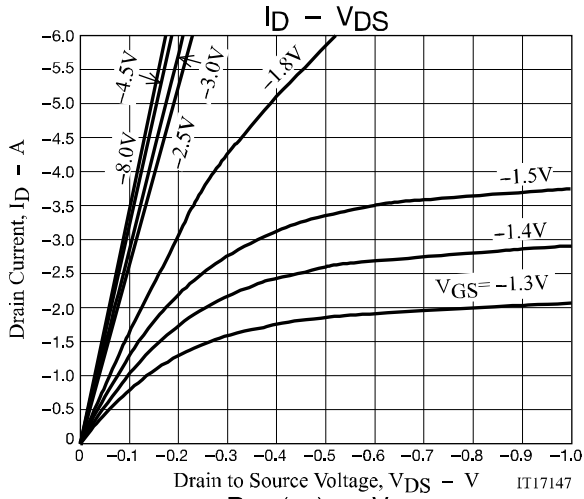
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0V$			-1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 1	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6V, I_D = -1mA$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6V, I_D = -3A$		11		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D = -3A, V_{GS} = -4.5V$		29	35	$m\Omega$
	$R_{DS(on)2}$	$I_D = -1.5A, V_{GS} = -2.5V$		38	48	$m\Omega$
	$R_{DS(on)3}$	$I_D = -0.5A, V_{GS} = -1.8V$		52	78	$m\Omega$
	$R_{DS(on)4}$	$I_D = -0.5A, V_{GS} = -1.5V$		70	140	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -6V, f = 1MHz$		1250		pF
Output Capacitance	C_{oss}			160		pF
Reverse Transfer Capacitance	C_{rss}			150		pF
Turn-ON Delay Time	$t_d(on)$		See specified Test Circuit.		8.4	
Rise Time	t_r			48		ns
Turn-OFF Delay Time	$t_d(off)$			165		ns
Fall Time	t_f			68		ns
Total Gate Charge	Q_g	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -6A$			12	
Gate to Source Charge	Q_{gs}			1.7		nC
Gate to Drain "Miller" Charge	Q_{gd}			2.1		nC
Diode Forward Voltage	V_{SD}	$I_S = -6A, V_{GS} = 0V$		-0.9	-1.2	V

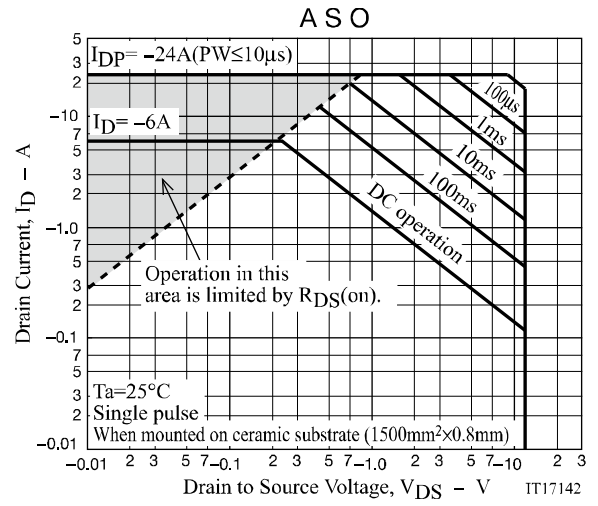
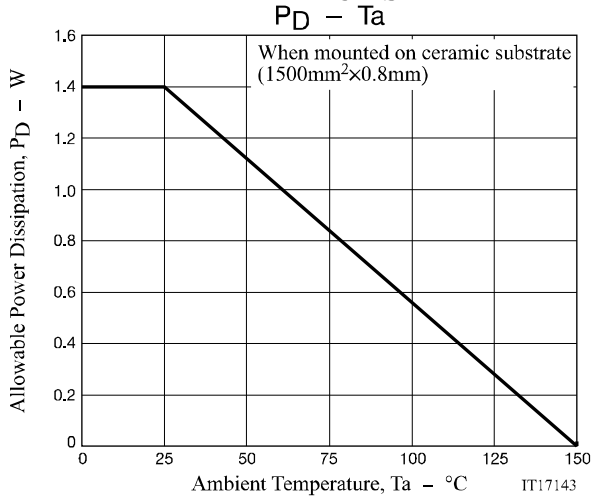
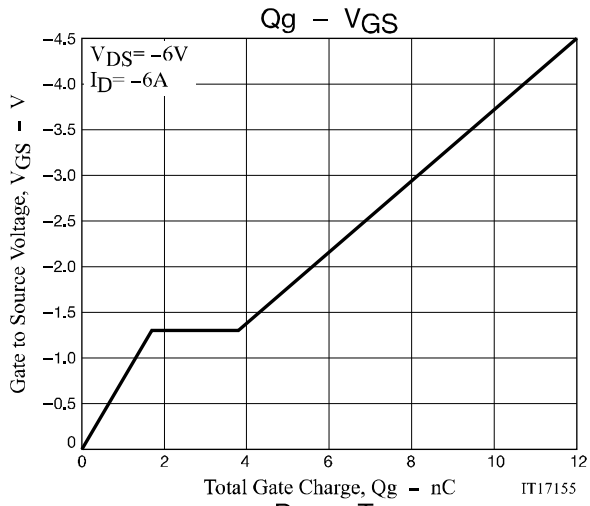
Switching Time Test Circuit



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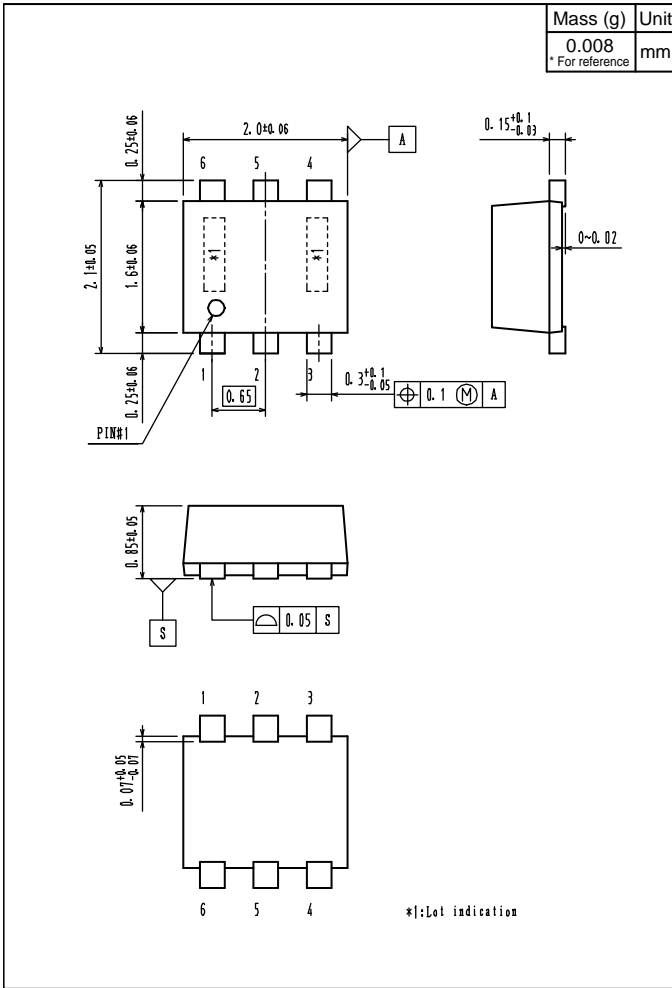
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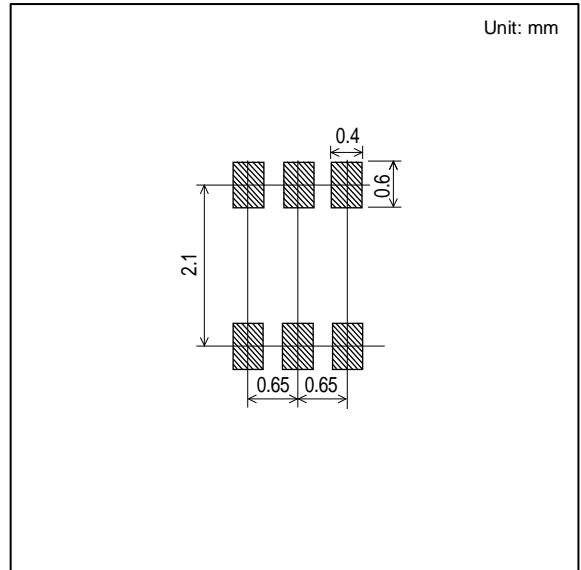
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Outline Drawing

MCH6353-TL-W



Land Pattern Example



Note on usage : Since the MCH6353 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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