



SAW Components

SAW duplexer

LTE band XXVIII Block B

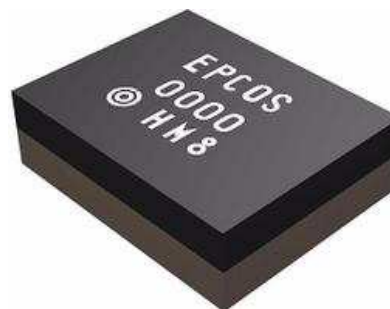
Series/type:	B8539
Ordering code:	B39791B8539P810
Date:	December 16, 2014
Version:	2.0

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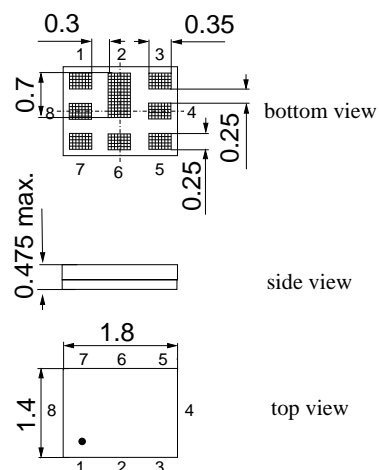
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Application

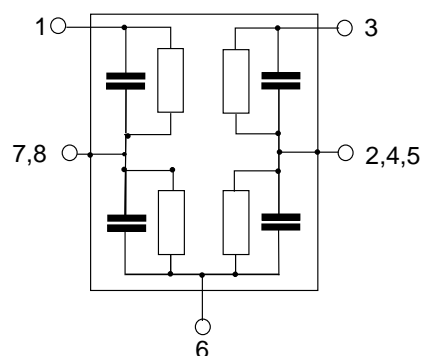
- Low-loss SAW duplexer for mobile telephone LTE Band XXVIII systems
- Low insertion attenuation
- Usable passband 30 MHz
- Duplexer for higher part of Band XXVIII (Block B)
- Companion type is B8538/B8540 for lower Band XXVIII (Block A)


Features

- Package size 1.8 x 1.4mm², package height 0.475mm max.
- RoHS compatible
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3**


Pin configuration

- 1 RX output
- 3 TX input
- 6 Antenna
- 2,4,5,7,8 Ground



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Characteristics

Temperature range for specification:	T = -20 °C to +90 °C
ANT terminating impedance:	Z _{ANT} = 50 Ω 6.0 nH
TX terminating impedance:	Z _{TX} = 50 Ω + 4.0 nH (series)
RX terminating impedance:	Z _{RX} = 50 Ω

Characteristics Tx - Ant		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	733.0	—	MHz
Maximum insertion attenuation	α				
	718.240... 747.760MHz		1.9	2.8	dB
Amplitude ripple	α				
	718.240... 747.760MHz		1.0	1.9	dB
VSWR					
TX port	718.0 ... 748.0 MHz		1.7	2.0	
ANT port	718.0 ... 748.0 MHz		1.4	2.0	
Attenuation	α				
	10.0 ... 698.0 MHz	30	38		dB
	698.0 ... 710.0 MHz	15	38		dB
	758.240... 772.760MHz	15	30		dB
	773.240... 802.760MHz	41	44		dB
	859.0 ... 894.0 MHz	30	38		dB
	1225.0 ... 1250.0 MHz	40	47		dB
	1436.0 ... 1510.0 MHz	35	40		dB
	1559.0 ... 1563.0 MHz	35	39		dB
	1565.42 ... 1573.374MHz	35	39		dB
	1573.374... 1577.466MHz	35	39		dB
	1577.466... 1585.42 MHz	35	39		dB
	1597.55 ... 1605.89 MHz	35	39		dB
	1805.0 ... 1880.0 MHz	30	37		dB
	1930.0 ... 1995.0 MHz	30	36		dB
	2010.0 ... 2025.0 MHz	30	36		dB
	2154.0 ... 2244.0 MHz	30	35		dB
	2400.0 ... 2484.0 MHz	28	34		dB
	2570.0 ... 2620.0 MHz	28	34		dB
	2872.0 ... 2992.0 MHz	15	33		dB
	4900.0 ... 5950.0 MHz	15	23		dB

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Characteristics

Temperature range for specification:	T = -20 °C to +90 °C
ANT terminating impedance:	Z _{ANT} = 50 Ω 6.0 nH
TX terminating impedance:	Z _{TX} = 50 Ω + 4.0 nH (series)
RX terminating impedance:	Z _{RX} = 50 Ω

Characteristics Rx - Ant		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	788.0	—	MHz
Maximum insertion attenuation	α				
773.240... 802.760MHz			2.1	2.8	dB
Amplitude ripple	α				
773.240... 802.760MHz			0.7	1.4	dB
VSWR					
RX port 773.0 ... 803.0 MHz			1.8	2.2	
ANT port 773.0 ... 803.0 MHz			1.4	2.2	
Attenuation	α				
1.0 ... 699.0 MHz		40	62		dB
45.0 ... 65.0 MHz		50	70		dB
703.240... 732.760MHz		30	71		dB
718.240... 747.760MHz		50	61		dB
824.0 ... 6000.0 MHz		26	30		dB
Characteristics TX - RX		min.	typ. @ 25 °C	max.	
Isolation	α				
718.240... 747.760MHz		60	64		dB
773.240... 802.760MHz		54 ¹⁾	57		dB

1) 53 dB for T= -20°C to +20°C

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Maximum ratings

Storage temperature range	T _{stg}	-40/+85 ¹⁾	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	100 ²⁾	V	machine model, 10 pulses
ESD voltage	V _{ESD}	300 ³⁾	V	HBM,+/- 1 pulses
ESD voltage	V _{ESD}	600 ⁴⁾	V	CDM,+/- 3 pulses
Input power at	P _{IN}			
718.0 ... 748.0 MHz		29	dBm	} continuous wave 50 °C, 5000 h
elsewhere		10	dBm	

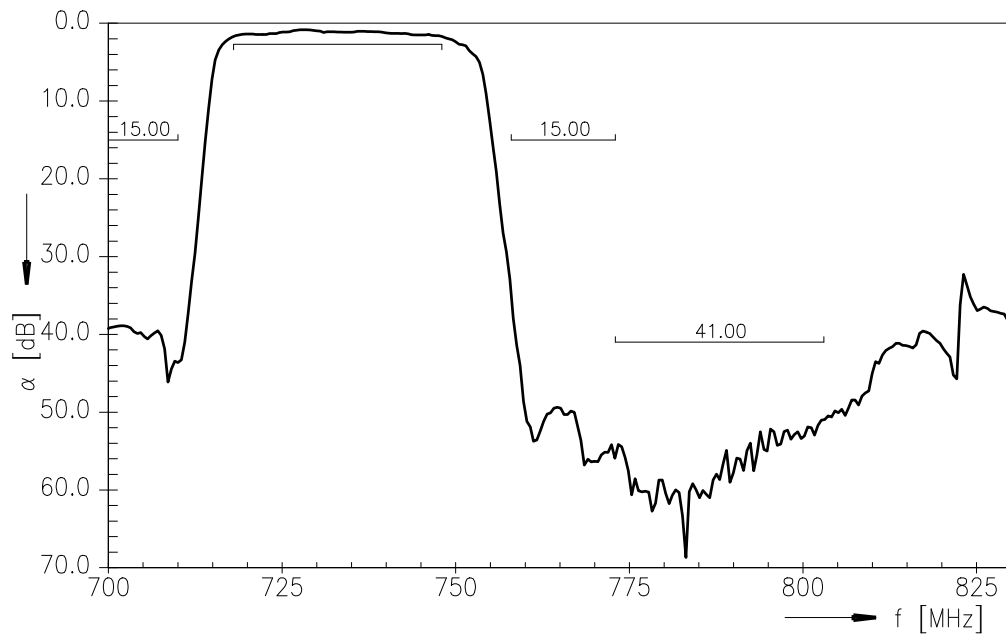
1) Extended upperlimit: 168 @ 125°C acc. to IEC 60068-2-2 Bb.

2) acc. to JESD22-A115B (machine model), 10 negative & 10 positive pulses.

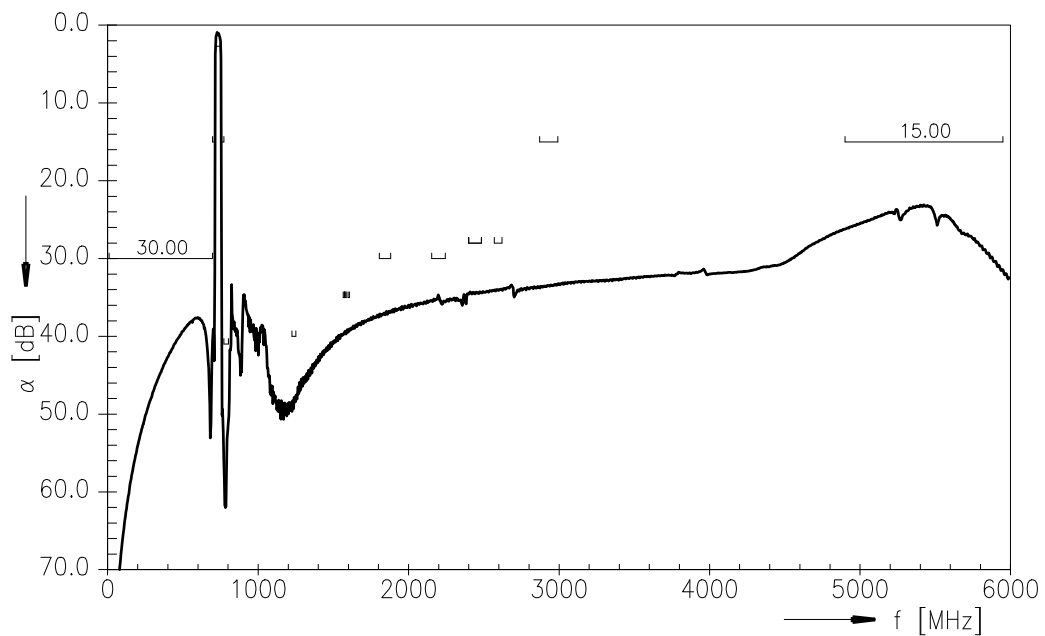
3) acc. to JESD22-A114F (human body model), 1 negative & 1 positive pulses.

4) acc. to JESD22-A101C (charge device model), 3 negative & 3 positive pulse

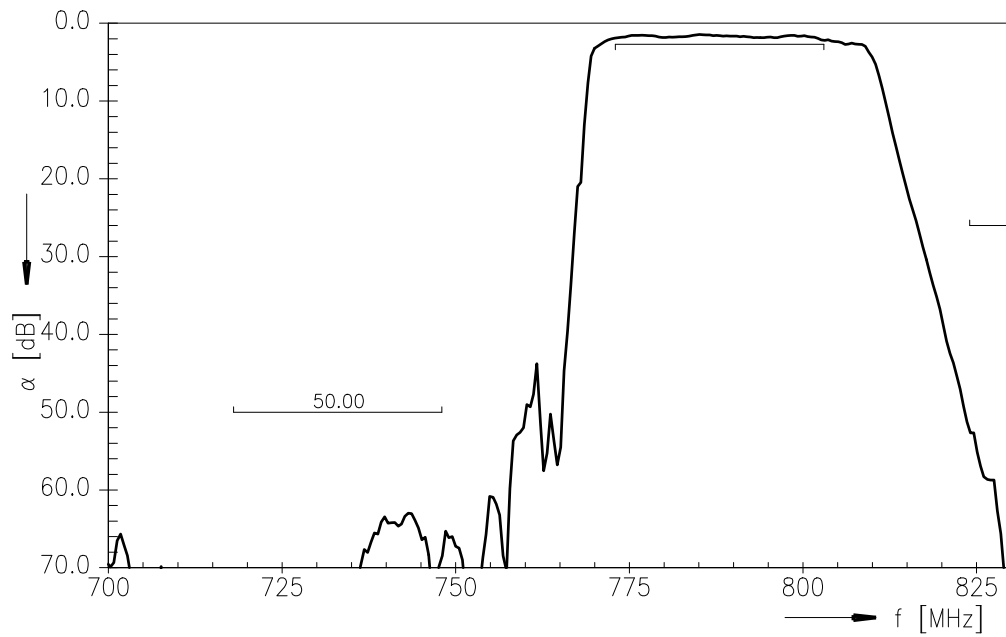
Frequency response Tx-Antenna



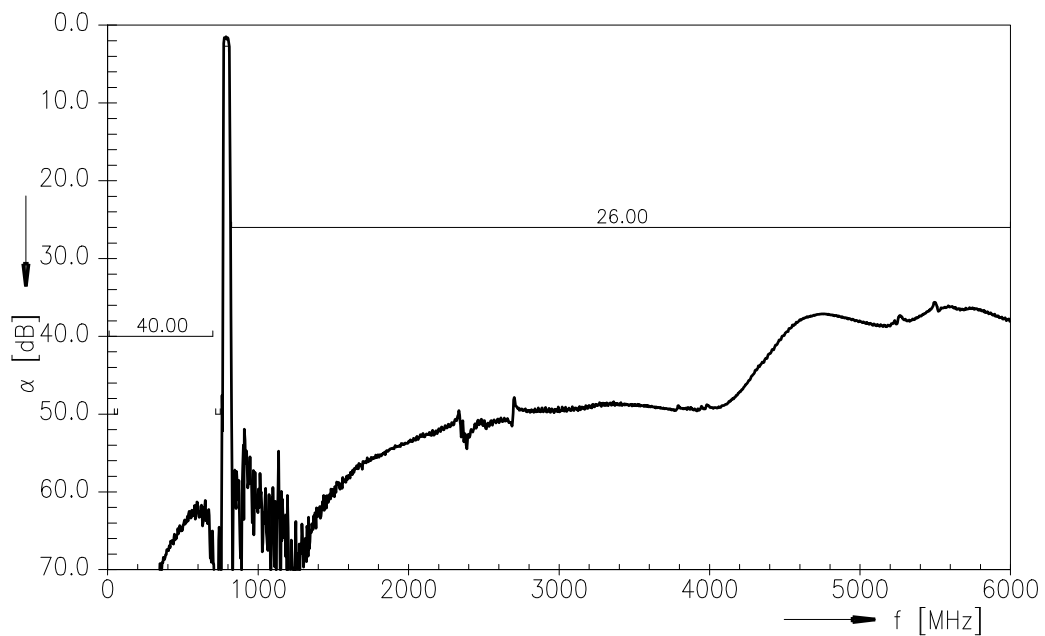
Frequency response Tx-Antenna (wideband)



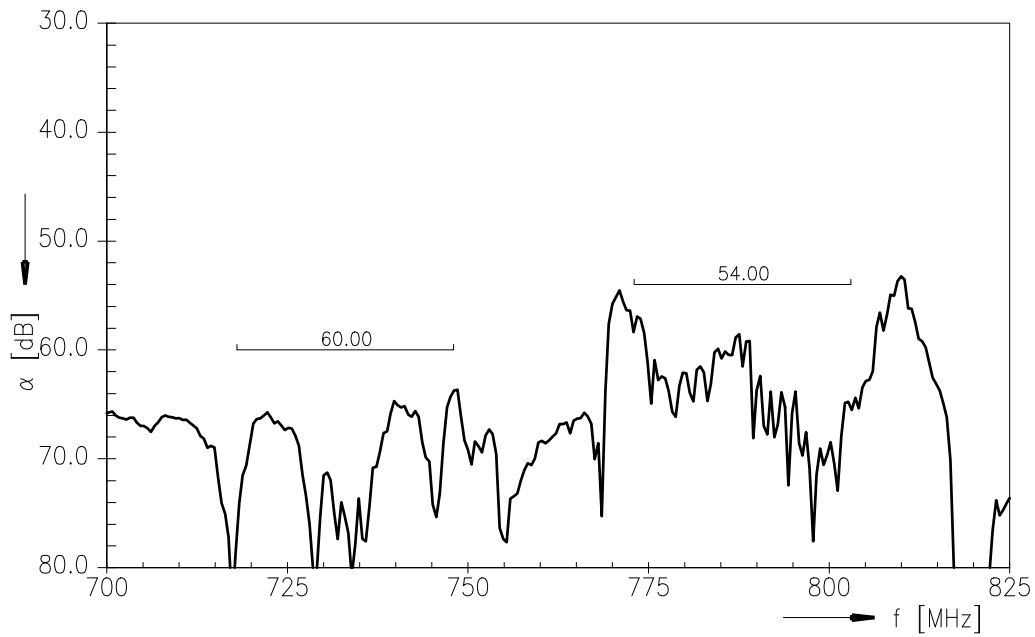
Frequency response Antenna-Rx



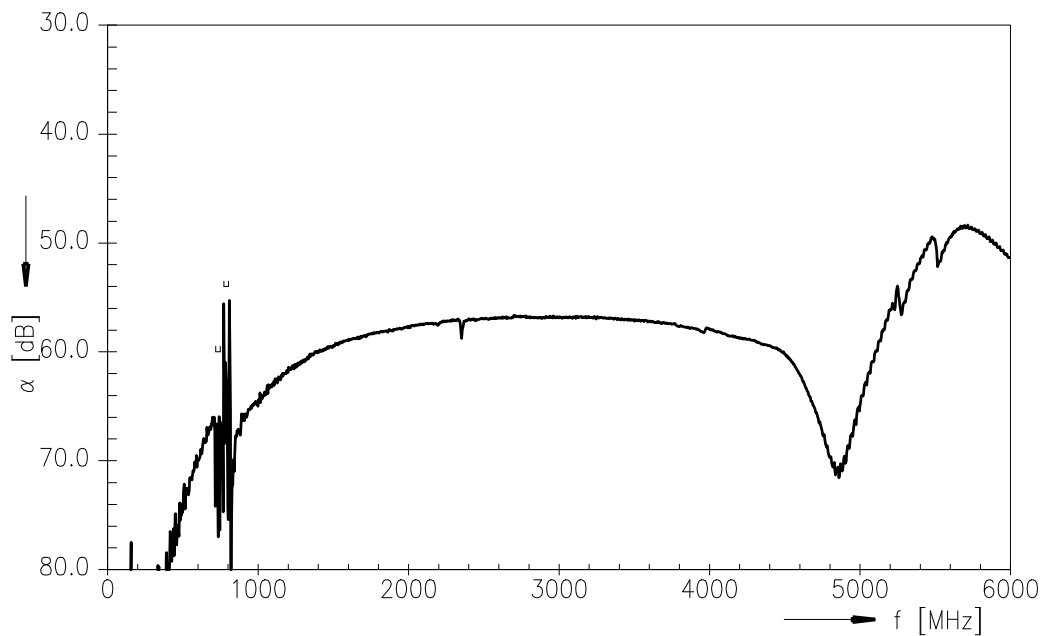
Frequency response Antenna-Rx (wideband)



Frequency response Tx-Rx (Power transfer function)



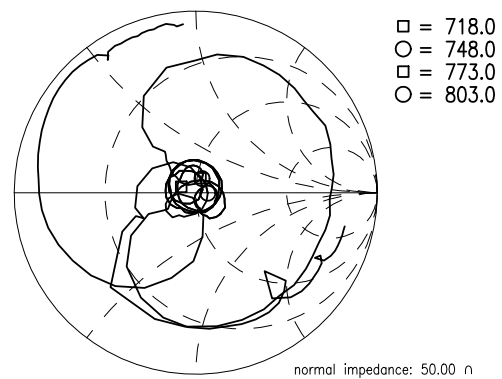
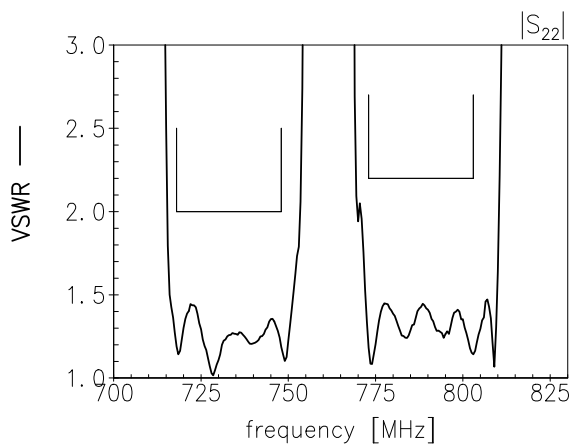
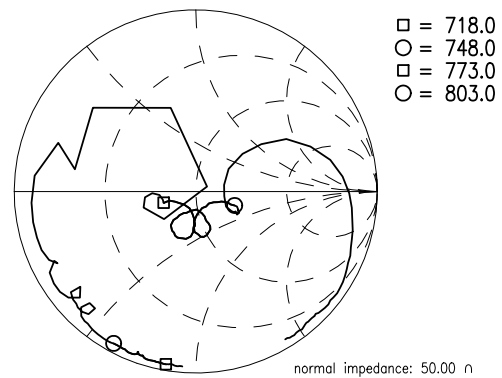
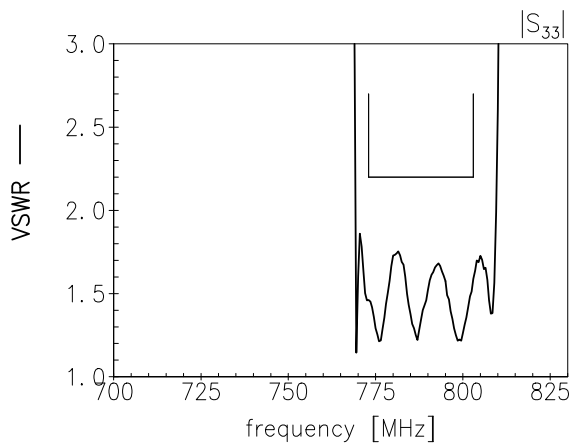
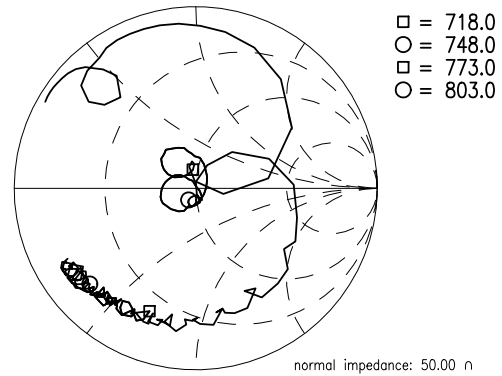
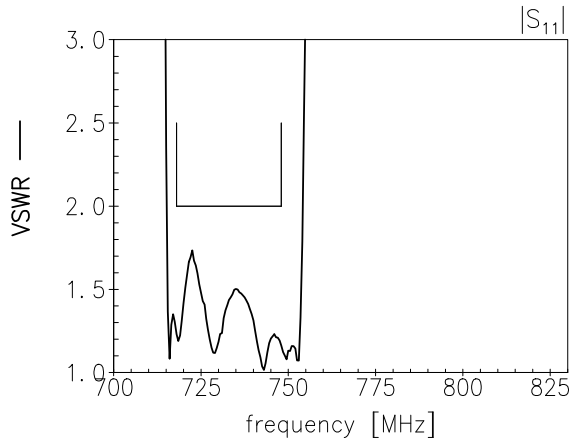
Frequency response Tx-Rx (wideband)



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Return loss S_{11} Tx-port S_{22} Antenna-port S_{33} Rx-portReferences



Please read *cautions and warnings* and *important notes* at the end of this document.

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References

Type	B8539
Ordering code	B39791B8539P810
Marking and package	C61157-A8-A79
Packaging	F61074-V8259-Z000
Date codes	L_1126
S-parameters	B8539_NB_UN.s3p, B8539_WB_UN.s3p See file header for pin/port assignment.
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8 th , 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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